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SWEET'S CATALOG FILE

A File of Manufacturers' Catalogs designed for the use of Architects, Engineers, Contractors and others whose practice it is to select, specify or purchase building materials, equipment and allied services.

SWEET'S CATALOG SERVICE
DIVISION OF F. W. DODGE CORPORATION
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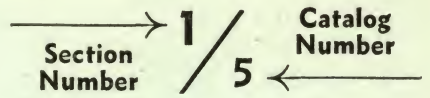

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See Cabinet Work—Wood; Trim—Wood

AMERICAN LUMBER & TREATING CO.

"Wolman Salts"
A Universal Wood Preservative

GENERAL OFFICES
37 West Van Buren Street, CHICAGO, ILL.

BRANCH OFFICES
BOSTON, MASS. FRANKLIN, VA. JACKSONVILLE, FLA. LOS ANGELES, CAL. NEW YORK, N. Y. ST. LOUIS, MO. SAN FRANCISCO, CAL. SHREVEPORT, LA.

Products

GENUINE WOLMAN SALTS, the fluoride-phenol-chrome and the fluoride-phenol-chrome-arsenate Wood Preservatives. Clean, odorless, paintable, somewhat fire-retardant. Higher toxicity than any salt preservative in commercial use. Non-corrosive to metals; no exudation; strongly fibre-fixed so that the protective effect is permanent.

WOLMANIZED LUMBER and TIMBER, any species of lumber, poles, posts, or other forest products treated under vacuum and pressure with Wolman Salts and by the Wolman Process.

Wolmanizing—A Process of Impregnation

Wolmanizing is the application of the vacuum and pressure process of impregnation, using Genuine Wolman Salts as the preservative. When dried after impregnation, the wood is physically unchanged, but is effectively protected against decay and insects. It is also fire-resistant in proportion to the quantity of metallic salts in the fibres of the wood.

Wolmanized lumber and related products are distributed through established lumber sales channels from treating plants located at strategic points throughout the United States. Facilities for fabrication are available at most treating plants.

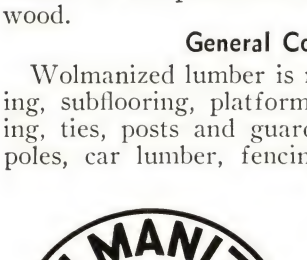
Wolman Salts are applied only by the full-cell process in closed retorts, insuring a deep and dependable penetration of the preservative to all treatable areas of the wood.

General Commercial Uses

Wolmanized lumber is recommended for use in roofing, subflooring, platforms, bridge timbers and planking, ties, posts and guard rails, dock superstructures, poles, car lumber, fencing, lining of ice houses, and wherever conditions invite decay or termite attack.

Wolmanized lumber can be painted or stained after treatment. The cost is no more, and often less than in the case of other preservative treatments.

Wolman Salts have a 30-year record of service under severe conditions of exposure in Central Europe; millions of feet of Wolmanized lumber have been installed in the United States and Central America during the past 15 years upon specifications of prominent engineers and architects.



"Wolman Salts" and "Wolmanized Lumber" are registered trade-marks of the AMERICAN LUMBER & TREATING CO. *The above seal branded on forest products is your guarantee of genuine "Wolmanized" material and its protection against decay and termites.*

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Service Records

A very thorough survey and inspection of the principal installations in the United States and in Central America, made by the *Pittsburgh Testing Laboratory,* provides the following conclusion from the detailed technical report on Wolmanized Wood:

"Wolman Salts, when properly used as a wood preservative treatment, will protect wood so treated by preventing or inhibiting decay.

This conclusion is based on the following:

(a) The reliably reported successful use of Wolman Salts in Europe.

(b) The fact that no traces of decay were found in the installations examined by us in the United States. These included installations up to eight years of age.

(c) The fact that decay of Wolmanized wood examined by us in the tropics has been almost negligible, installations up to nine years of age being examined.

(d) The finding of Wolman Salts in the heart as well as outer sections of specimens of Wolmanized wood that had been in service for various lengths of time up to nine years.

Attack by Termites

Wolman Salts (Tanalith) when properly used as a wood preservative treatment will protect wood so treated by preventing or prohibiting the attack by termites. This conclusion is based on the following:

(a) The fact that no evidence of termite attack upon Wolmanized wood was found in the installations examined by us in the United States.

(b) The fact that we failed to find or learn of a single case of termite attack upon Wolmanized wood in the survey in Central America, of the Standard Fruit & Steamship Company's properties. This Company has used 35,000,000 feet of Wolmanized Lumber there during the last nine years.

(c) The finding of Wolman Salts by chemical analysis in all parts of specimens of Wolmanized wood taken after exposure to severe conditions in the tropics for various lengths of time up to nine years.

Respectfully submitted,
PITTSBURGH TESTING LABORATORY,
B. H. Witherspoon, President."

Specifications

All the lumber or timber specified to be Wolmanized, shall be given a pressure treatment of High Fixation Wolman Salts preservative, procedure to be in accordance with the published standard methods of the AMERICAN LUMBER & TREATING CO., and subject to the inspection of the Pittsburgh Testing Laboratory; the *lumber to be branded with the Pittsburgh Testing Laboratory certification as to treatment.*

The amount of Wolman Salts solution injected into the lumber or timber and its strength of concentration shall be so controlled as to leave not less than (*) pounds of dry salt for each cubic foot of material treated, and this shall permeate all of the sapwood and as much of the heart wood as practicable. No charge shall contain less than 90% nor more than 110% of the quantity of preservative specified.

*Insert the desired final retention of dry salt content, which may be $\frac{3}{16}$ pound for ordinary building work, or for ties, poles, and outside construction $\frac{5}{16}$ pound or more of Wolman Salts for each cubic foot of the treated wood. Higher retentions may be specified, such as $\frac{4}{16}$ pound, ½ pound, or ¾ pound per cu. ft., when there is exposure to exceptionally severe conditions in service, which, in the judgment of the specifying engineer, call for exceptionally high protective values from the treatment.

Note: After treatment the lumber should be kiln dried or properly piled and allowed to dry before using, to allow for fixation of the preservative and to insure against excessive shrinkage after being put in service.

When the lumber is to be painted or varnished, it is imperative that the wood be dry before applying paint or varnish.

"Wolmanized Lumber" in Yards

Many retail yards carry "Wolmanized Lumber" in stock. Write us for further information on sources of supply for the treated lumber.

Interesting illustrated booklet will be forwarded on request.

8/2

CELCURE SOUTHERN CORPORATION

Wood Preservation Engineers and Manufacturers

Graham Building, JACKSONVILLE, FLORIDA

ATLANTA, GA.
BOSTON, MASS.
CHICOPEE, MASS.

COLUMBIA, S. C.
MIAMI, FLA.
NEW ORLEANS, LA.

NEW YORK, N. Y.
PROVIDENCE, R. I.
WORCHESTER, MASS.

Unfailing Protection Against Termites and Rot

Celcure

Maximum Effectiveness Minimum Cost

THE CLEAN, PERMANENT, CHEMICALLY REACTING WOOD PRESERVATIVE

What Is Celcure?

A time-tested, positive protection against the ravages of rot, termites, boring larvae, beetles and other insects, teredo and other marine organisms. Celcure is not a creosote derivative but is a mixture of chemicals in solution.

Recommendations

The best authorities recommend that in localities where wood is subject to termite damage or decay, all structural lumber up to and including the first sub-flooring, should receive a preservative treatment before installation.

Celcure processing specifications at our plants demand a net retention of preservative chemicals which tests have repeatedly shown to be positively effective.

Application

Service records of the following classes of installation prove that Celcure Processed (Impregnated) Lumber is not only unexcelled as a preservative but may be used with absolute safety where injury to paint and decorations, contamination of food, stained clothing, added fire hazard, stunting of plant growth, unpleasant odors, protection of farm animals or pets, is to be considered.

- Railroad Ties
- Telephone Poles
- Greenhouses
- Fencing
- Refrigerating Compartments
- Schools
- Stadium Seats
- Water Towers
- Flumes
- Mine Timbers
- Farm Buildings
- Gates and Fence Posts
- Bridge Timbers and Decking
- Dwellings
- Furniture
- Textile Mills
- Station Roofs and Platforms
- Ship and Yacht Building
- Docks and Barges
- Henhouses
- Garden Seats
- Porches
- Laundries
- Boardwalks
- Preserve and Canning Factories
- Packing Houses
- Tourist Camps
- Billboards
- Mill and Mine Barracks

CELCURE'S OUTSTANDING FEATURES

Why Celcure Never Fails

Because of the chemical reaction which takes place upon contact of Celcure with the lignin-cellulose of which lumber is principally composed, the cellulose loses its food value, no longer attracts termites and will not sustain life in rot fungi. High toxicity is avoided and instead of poisoning enemies as they consume it, the wood, by its changed nature, effectively averts their attack.

Permanent (Non-leachable)

Celcure protection is permanent because it does not depend on a soluble poisonous deposit in the wood cells, but definitely changes the composition of the cellulose and does not leach out or evaporate by the action of sun or water.

Clean

Celcure treatment imparts a permanent, pleasing olive drab color to lumber, its shade depending upon the kind of wood. It is odorless, exudes no oils or chemicals and is highly suitable for interiors and exposed installations such as stadium seats and boardwalks, on which less appropriate preservatives may occasion serious damage claims.

Paintable

No properties of Celcure or Celcure Processed (Impregnated) Lumber when dry are antagonistic to paint, varnish, plaster or other decorative materials that may be applied over it. In fact, it furnishes a perfect base coat for paint and will not burn or bleed through, while it positively prevents mold growth which, unchecked, will ruin a paint job on wood.

Termite Resisting—On left, an arrow indicates a termite nest on a tree in Puerto Rico, in which test sticks were placed. On the right is a close-up of nest and sticks after 2½ years' test. "A" is the untreated stick and "B" is the stick dipped in Celcure. "A" is honeycombed by termites, but "B" has not been attacked even slightly—an amazing proof of the ability of Celcure to withstand concentrated termite attacks.

Non-poisonous and Non-inflammable

Celcure contains no arsenic in any form whatever, the highly leachable, highly toxic ingredient upon which many treatments depend almost entirely for whatever preservative qualities they may have. Celcure in itself, having combined chemically with wood fibres so that it will not leach and being of comparatively low toxicity, can under no circumstances contaminate meats, fruits, vegetables or other foods that come in contact with it. This quality makes it unsurpassed for use in refrigerating compartments, packing plants, canning factories and similar installations.

Celcure contains no creosote oil or other inflammable ingredient. On the contrary, due to the nature of its changed chemistry, Celcure-impregnated wood is fire retardant.

Weather Resisting and Non-corrosive

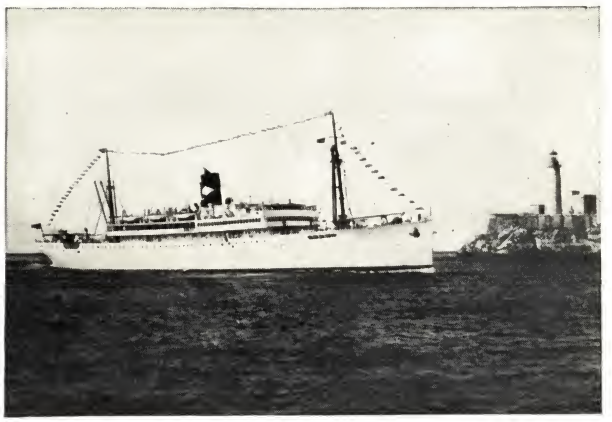
Boardwalks and similar installations of Celcure Processed Lumber retain the smooth texture of new wood long after untreated lumber will have weathered, roughened and splintered from the action of alternate rain and sun. Nails will not "draw" nor will they corrode in Celcure Processed Lumber.

Economical

Even when compared with preservatives that do not approach its effectiveness *Celcure costs less*:

Celcure Processed (Impregnated) Lumber, or Celcure for surface application pays big dividends in reduced maintenance costs.

At Left
Rot Test—after 2½ years in dry ground the Celcure processed piece is sound; the untreated control is destroyed. Test conducted by the largest Banana Company operating in Central America.



At Right
One of several fruit carriers built by Bethlehem Shipbuilding Corp. using Celcure Impregnated Lumber in all refrigerating holds.

CELCURE PROCESSED (IMPREGNATED) LUMBER

Celcure Processed (Impregnated) Lumber is supplied, treated by *vacuum pressure* or by *natural vacuum* (our improved hot-cold open tank method), according to architect's specifications. This material has been demonstrated by Government and private laboratory and field tests and service records to be unexcelled for frame residence and industrial construction, as well as for boat building, docks, bridges, etc. Its resistance to the attack of rot, termites and marine borers is positive.

Specification

The following lumber shall be Celcure Processed (Impregnated) by Vacuum Pressure/Natural Vacuum, Hot-Cold Open Tank, (*delete whichever method does not apply*) method at a plant operated or duly licensed by the CELCURE SOUTHERN CORPORATION, of Jacksonville, Florida. All surfaces which are cut after treatment shall receive a drenching brush cost of full strength Celcure as furnished in the original package by the manufacture. (*If Hot-Cold Open Tank treatment is specified add*:) The lumber shall be kiln dried or air seasoned to a maximum moisture content of 20% before treating.

The approximate cost of Celcure Processing sills, first floor joists and sub-flooring in the average residence ranges between $3.00 and $6.00 per hundred square feet of first-floor area, depending upon class of construction and location.

CELCURE FOR SURFACE APPLICATION

Because of its extraordinary (unique) affinity for the lignin cellulose of wood with which it combines chemically and permanently, Celcure provides surprising protection to lumber even when applied only to the surface by brushing, spraying or dipping, and this treatment is recommended for the job on which Celcure Processed (Impregnated) Lumber cannot be specified.

This treatment is not recommended for underground installations or those in direct contact with the ground, nor is it suitable where mechanical wear or severe checking is likely to occur. It is in no case recommended as equal to impregnation but is extraordinarily effective considering its very small cost.

Specification

The following lumber shall receive two drenching brush coats of full strength Celcure as supplied in the original package by the manufacturers. The first coat shall be so applied before assembling that all surfaces, including hidden surfaces, including joints, shall be thoroughly treated. The second coat shall be applied after assembling and nailing, with special attention to any surfaces that are broken or cut after the first coat was applied.

Note: Efficient and thorough drenching by spray may be substituted for brushing on. Somewhat better than good brush application is the immersion of lumber in air temperature full strength Celcure on the job after pieces have been cut to fit. *Do not heat Celcure solution.*

REPORT AND ILLUSTRATIONS OF TEST CONDUCTED BY THE SCOTTISH MARINE BIOLOGICAL ASSOCIATION

One Year

Note how the control pieces (untreated pieces of White, Red, Oregon and Pitch Pine) have suffered after one year's immersion in the sea water. *But* notice how the four *Celcurised* blocks have resisted effects of the water, and all the forms of marine pests.

After Five Years

Celcurised Wood remains undamaged while untreated controls have almost entirely disappeared. Proof that *Celcurised* Wood resisted perfectly attacks from grabble, stoneborer, shipworm or teredo, Boring sponge, and wood borer which abound in waters near Millport where test was conducted.

CARBOLINEUM WOOD PRESERVING CO.

(INCORPORATED)

Manufacturers of Wood Preservative

Carbolineum Building, 528 West Highland Street

MILWAUKEE, WIS.

Product and Description

AVENARIUS REG. U.S. PAT. OFF. TRADE MARK CARBOLINEUM

Avenarius Carbolineum is a thin heavy oil, brown in color, ready for immediate use. It is manufactured in only one standard grade of uniform quality, therefore, future users can positively depend upon the same satisfactory results as achieved with it in the past.

Avenarius Carbolineum has established its reputation for highest quality and uniformity. Its preservative value is no theoretical conclusion, but is based on actual results. References can be supplied by us from nearly every locality in the United States.

Adds 100% to the life of wood—Always uniform in quality—Carbolineum preserves any wood against dry rot and premature decay.

Carbolineum was invented in 1876 by the late Richard Avenarius, who originated wood preservation by simple surface treatment.

Carbolineum registered in the United States Patent Office, No. 14048, is always sold with the inventor's name added, as: *Avenarius Carbolineum.* The arrow trademark makes identification easy.

Termite (White Ant) Protection

To drive out termites and to prevent their occurrence, it is necessary to apply a liberal coating of Avenarius Carbolineum about a foot wide to the footings of the building, as well as to all metal or concrete to form a complete barrier. Repeat this performance on the timbers on which the joists of the first floor rest.

A Long Lasting Stain—Rustic nut brown color
No Increase in Fire Risk—Contains no volatile ingredients

Where to Use

Half timber work, shingles and roof boards; fence posts, poles or props; scale platforms, block floors; screeds or sleepers embedded in concrete; ballast timbers for machine foundations; guards or bumpers of concrete platforms.

Upon request we will be glad to send a liquid sample of Avenarius Carbolineum or a sample of board which has been treated with it.

Comparison Chart

AVERAGE CREOSOTE OIL	AVENARIUS CARBOLINEUM
Variable Quality	Uniform Quality
Often mixtures of volatile oils, tar or pitch—water, gas, petroleum or wood tar distillates.	Anthracene oil and other ingredients constantly checked to maintain quality on which our service records are based.
Often high in acid content—injurious to wood fibre.	Free of injurious acids. Exclusive chlorination process increases decay-proof and antiseptic qualities.
Expensive treating equipment required to force impregnation by hot and cold bath treatment, or by vacuum or pressure cylinder process.	Negligible equipment cost. Application by brush, mop, spray or short time dip. Self-impregnating.
Usually leaches—bleeds—oozes.	Permanently fixed—no bleeding—no oozing—no leaching.

Approximate Cost of Material and Labor

About ¾¢ to 1¼¢ per sq. ft. surface treated.

COVERAGE, BRUSH AND SPRAY APPLICATION

Coverage sq. ft. per gal.	Brush one coat*	Spray one coat
Dressed lumber	200	150
Rough lumber	100	75
Shingle roof	100	75

*For second coat, one-quarter to one-third as much required.

Labor Requirements—*Brush*—One laborer can brush about 1,500 sq. ft. in 8 hours.

Spraying—With a spray gun about 5000 sq. ft. can be covered in same time.

COVERAGE, DIPPED—TWO MINUTES FOR EACH INCH OF MINIMUM THICKNESS OF LUMBER

Coverage per 1,000 ft. b.m.	Timber			Lumber			
Size, inches	12 x 12	6 x 12	3 x 12	2 x 10	2 x 8	2 x 6	2 x 4
Gallons required	3	5	8	12	13	14	15

Labor Requirements—For dipping 1000 board feet. Approximate average for above sizes—3½ hours of labor.

Specification and Application Methods

For Use on Wood

A wood preservative known as Avenarius Carbolineum, manufactured by the CARBOLINEUM WOOD PRESERVING CO., Milwaukee, Wis., shall be used on .....

It can be used in its natural state when the temperature is above 70° F., otherwise when quick penetration is desired or on damp or partly seasoned wood, it shall be heated to 150° to 220° F. or slightly above the boiling point of water.

Dipping—***Method One***—(When the treatment of a large amount of lumber comes in consideration, this method is the most economical.) After trimming timber or lumber, immerse it in Avenarius Carbolineum. 1-in. lumber to be submerged about two minutes. Add two minutes for each additional inch of lumber thickness.

Brush or Mop—***Method Two***—After lumber is trimmed or framed, apply Avenarius Carbolineum liberally with a wire bound or rubber set long handle brush or mop. Saturate well at all cross cuts, mortises, tenons and knotty spots. On old wood, where decay has already started, decayed parts should be removed before applying oil.

Spraying—***Method Three***——When a large amount of surface or wood in structure already erected is to be treated, the spraying method can be used best. Avenarius Carbolineum will work with any efficient spraying or paint machine.

IN NEW YORK 1887-1926

PROTEXOL CORPORATION

IN KENILWORTH SINCE 1919

TELEPHONE
ROselle 4-1900
MUrray Hill 2-6928

OFFICE AND WORKS
37 Market Street, KENILWORTH, N. J.

CABLE ADDRESS
Carblineum

Products and Services

FIREPROOFING TREATMENTS for wood to National Board of Fire Underwriters, New York City, United States Government and International Marine Convention requirements. Labeled by the Underwriters' Laboratories, Inc. as permanently non-combustible, non-hygroscopic and non-corrosive. Approved by the New Jersey Department of Labor, the United States Bureau of Marine Inspection and Navigation, the International Association of Fire Chiefs and various building and insurance authorities. Takes the same low rates of fire insurance as other non-combustible materials. Stocks of fireproofed wood for interior woodwork available. Ask for stock list.

Underwriters' Laboratories Approval is abstracted in Circular 96.

DECAY AND INSECT PREVENTING TREATMENTS with zinc chloride, chromated zinc chloride, sodium fluoride or fluor-phenol to standard pressure treatments of American Wood Preservers Assn. Capacity 20,000 bf per day. Protection against termites, beetles or carpenter ants. Colorless and odorless.

COMBINED PRESSURE TREATMENTS of decay or insect prevention and fireproofing for interior or exterior use.

WOOD PRESERVING OILS for brush, spray or open tank treatments to recognized specifications. Also Colorless or Odorless Preservatives. See Bulletin 43 for grade best suited.

Services—Chemical and Engineering Laboratories. Full size gas fired furnace for testing door assemblies, sash or partitions to A.S.A. and A.S.T.M. standards available for private or official tests.

Fiftieth Anniversary

Facilities for Treatment

The equipment includes two pressure cylinders or retorts and eight 15,000-ft. capacity Moore dry kilns. Investigation and inspection is invited. References and literature upon request.

Fireproofing Treatments

Fireproofing treatments vary in their protection with the kind and amount of chemicals injected.

Class A—Non-combustible to Underwriters' Laboratories, Inc. requirements
Class B—Pyresote—Comprehensive fire and decay resisting treatments
Class C—Slow burning to any desired degree of fire resistance
Class D—Non-flammable or limited fire resistance.

For interior woodwork of fine residences, court houses, schools, hospitals, churches, libraries, museums, art galleries, theatres, or institutional buildings, non-combustible wood is recommended.

Specify—All wood for interior trim shall receive a Class-A Fire-proofing Treatment which will satisfactorily meet requirements of the Underwriters' Laboratories or the Rules for Inspecting Fireproofed Wood used by the Engineering Laboratory of Columbia University.

Means of Egress—Stairs—Doors—If means of egress are to be safe they should be of non-combustible wood since insulation and smoke requirements preclude the use of steel.

One-hour doors of fireproofed wood made by

W. D. Crooks & Sons	Williamsport, Pa.
Hyde-Murphy Company	Ridgway, Pa.
Farley & Loetscher Mfg. Co.	Dubuque, Iowa

have been approved by the New York Board of Buildings after successfully passing one-hour fire tests which cover the passage of fire and smoke and heat transmission. Such doors are especially to be recommended as fire cut-offs for basement or garage entrances and kitchens—40% of all fires originate in basements and kitchens.

Reducing the fuel present in a fire area is contributing to fire protection, hence reduction in combustibility of fireproofed wood trim and stairs insures safe means of egress.

Specify—Flush doors of 1¾-in. thickness with face veneers of (species of wood) shall be of fireproofed wood capable of meeting the one-hour standard fire test as required by C-19-33 of the A.S.T.M.

Wood doors as fire stops are covered by Circular 97.

For structural members of buildings, including stage construction for theatres, spires for churches.

Specify—The wood after framing shall receive a Class C pressure fireproofing treatment which will satisfactorily meet the requirements of specifications C 132-37T of the A.S.T.M.

For scaffolding, shoring or temporary construction, for grand stands or fairs, specify Class D treatments. Meets New York, Philadelphia and Washington Fire Underwriters' and A.S.T.M. requirements.

Cost—2.5% represents the increased cost for a $315,000 school building. This covers fireproofing millwork, rough sleepers, underflooring and flooring. On an apartment house having 5234 rooms the added cost was 2.28%, while on another it amounted to 2.83%. On a cost per room basis the increase on carpentry was 1.93%, while for the flooring, it was 1.35% of the entire operation. On a ten million dollar ship the added cost was but .5%.

Principles of Fireproofing—The basic principle of fireproofed wood is to prevent spread of fire; aim is to increase resistance which such wood offers to burning. It is not to be assumed that such wood will endure indefinitely an increasing attack of flame without charring or disintegrating. Such wood will not receive, sustain or transmit flame. All flame existing will be only that of the extraneous substance. When flame or intense heat is applied to fireproofed wood, the wood will char at point of contact, but it will not burst into flame and the destructive effect of the heat will be confined to point of contact with the flame. Fireproofed wood aims at permanent elimination of the property of flammability from wood which is a non-conductor.

Fireproofing is a process involving the impregnation of wood by means of chemical compounds under pressure which tend to retard combustion, when fire is applied to properly treated materials. Heat applied to the surface of a fireproofed door, for example, starts decomposing the chemicals in the tissues of the wood which prevent the oxygen of the air from uniting with the carbon of the wood. In other words, the chemical reactions resulting through the action of the heat serve primarily as paralyzers to the combustion of the woody tissues that are so heavily charged with various chemical compounds.

These and anti-corrosive chemicals which are injected into the wood must be so precipitated in the wood that they will remain fixed (insoluble) until liberated by heat.

Fire Retardant Treatments for Wood is the title of Bulletin 46.

Physical properties of wood, such as strength, are little affected by proper preservative or fireproofing treatments.

Weight of wood is increased by quantity of dry inorganic salt (chemical) injected which will vary from ½ lb. per cu. ft. for lightest treatment with zinc chloride to 8 lbs. per cu. ft. for heaviest fire resistive treatments.

Hardness of wood is similarly increased but its workability is little affected if tools of tungsten carbide are used. A survey is available.

With the exception of white oak, which is only slightly darkened, the natural color of wood undergoes no change.

Wood impregnated with inorganic salts will receive and hold satisfactorily any desired finish of wax, varnish, stain or paint.

Glue will hold tenaciously. This as well as corrosiveness on metal fastenings—as brass screws, iron nails and hinges—was reported on by the U. S. Forest Products Laboratory in National Lumber Bulletin for September, 1931, and was based on an examination of 26-year-old fire retardant wood from the Belmont Hotel in New York.

Working, Gluing & Finishing Fireproofed Wood is covered in Circular 96.

Bachert Electric Fireproofing Process was adopted by the United States for battleships, cruisers, torpedo boats, etc., on July 25th, 1895.

Protection Against Decay and Insects

Preservative Experience—For over 50 years Protexol quality applied by brush, spray or open tank has been successfully used for surface treatment (brush, spray or open tank) of timber to prevent decay and attack of insects. Protexol (protects all) represents value demonstrated by actual time tests—by results. Protexol Wood Preservative is the "standard" wood preservative for surface treatments established by practice. See Bulletin 40.

MEMORANDA

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FOURTEEN PLANTS TO SERVE YOU

For Reilly Built-up Roofing and Waterproofing, see File Index

REILLY *Transote*

A highly Refined, Scientifically Blended Transparent Coal Tar Creosote, Especially Developed to Provide a Colorless Treatment for the Preservation of Wood Against Decay and Insect Attack.

Permanent Protection Against Termites and Decay

Reilly *Transote* is the scientific answer to the problem of a colorless treatment for termite control and wood decay. This highly refined, transparent coal tar creosote is the result of years of exhaustive research. Tests conducted under conditions far more rigorous than any encountered in actual experience have proven that Reilly *Transote* affords permanent protection against termites, powder post beetles and other insects, and also affords protection against decay and wood decaying fungi. Not only does *Transote* eliminate wood eating insects from infested lumber, but *Transote* also gives positive protection against further infestation.

Treated Lumber Is Dry—Unchanged in Color—Can Be Painted, Stained, Varnished or Glued

These sections could still be sound timbers if they had been Transoted.

Reilly *Transote* retains all the toxic and preservative properties of crude coal tar creosote, while all objectionable features have been eliminated which have made the crude product impracticable for use in homes and other buildings where color painting is required. Lumber treated with Reilly Transote remains dry—not oily—unchanged in color—and can be painted, stained, varnished or glued with the same ease and dependability as untreated wood. The preservative treatment also acts to a degree as a filler, with the result that less paint is required to cover a given surface.

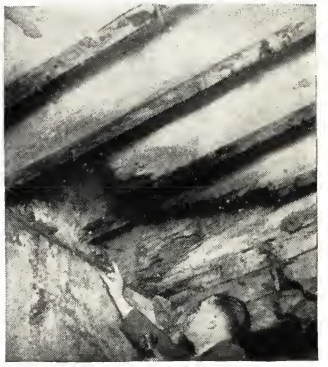
Safe and Economical to Use

There is no health hazard to workmen handling lumber treated with Reilly *Transote,* nor to occupants of buildings constructed with lumber treated with Reilly *Transote,* since lumber so treated is non-poisonous to humans and liberates no toxic fumes.

The cost of the protection which Reilly *Transote* affords is insignificant in comparison with the damage which may result from termite infestation or decay. The use of lumber treated with Reilly *Transote* is economical because it obviates future expensive replacements and insures permanence of the construction.

All Vital Parts Should Be Protected

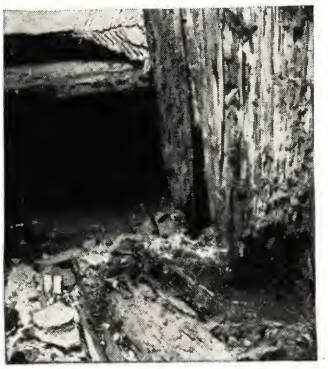
Regardless of whether a building rests on concrete and has steel supports, all such parts as sills, joists, sub-flooring, studding, roof timbers, stringers and uprights should be protected with Reilly *Transote.* Also the door frames, window sash, porches, steps and all woodwork in contact with or in close proximity to the ground offer means of entrance for termites unless properly protected with *Transote.*



Fungi destroyed these heavy beams in this west coast warehouse. Note the large areas rotted out. Transote protects lumber against Fungi rot.

Easily Applied to Meet All Possible Conditions

Reilly engineers have designed a simple and efficient means of applying *Transote* which meets every possible condition. The ease with which lumber can be treated and rapidity with which it penetrates deeply into wood make *Transote* an outstanding development in the field of wood preservation. For certain woods, such as larch, hemlock, fir and white oak, because of their refractory nature, application under pressure is recommended. Other woods, such as southern yellow pine, ponderosa pine, sugar pine, cypress. sap cedar, red oak, sap redwood, ash, hickory, chestnut, maple, gums and cherry, can be successfully treated by immersion. Specific information on methods of treatment will be mailed on request.



Base of a 10"x10" column in basement of six-story building completely destroyed by termites in spite of metal lath and plaster protection.

Availability

Reilly *Transote* is available in 1, 5 and 55-gal. containers, and in tank cars. Lumber preserved with Reilly *Transote* may be obtained from progressive dealers everywhere. Lumber dealers on the Pacific coast can obtain pressure treated lumber from our Seattle plant.

THE WOOD PRESERVING CORPORATION

A KOPPERS SUBSIDIARY

Preserved Lumber for Every Purpose

Koppers Building, Pittsburgh, Pa.

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Products

Pressure-treated wood foundation timbers, piling, columns, framework, joists, stringers, sub-flooring, flooring sills, doors, window frames, stairs, siding, roofing, plank, rafters, fence posts, pickets, rails, poles, posts, bridge materials, guard rails; dock, wharf and pier materials; treated wood for tanks, sumps and vats, cribbing, retaining walls, trench lining and covers, flumes, etc.

Stocks

Stocks of seasoned lumber are maintained at all times ready for immediate shipment in accordance with architects' specifications.

Types of Preservative Treatments

Creosote, made from coke oven tar, is the most effective preservative of wood against both decay and insects. It is also by far the most widely used, approximately 94% of the wood treated in this country being pressure treated with creosote or creosote mixtures (U. S. Department of Agriculture, 1935).

However, there are cases where color, odor and paintability of wood must not be appreciably changed. In those cases, preservative treatments are made under pressure with chemical solutions which do not alter the physical characteristics of the wood. When used above ground, chemically treated wood has given very satisfactory results. Proper pressure treatments with chromated zinc Chloride and Wolman salts are available at plants of THE WOOD PRESERVING CORPORATION where facilities are maintained for the proper drying, framing and clean treatment of the wood.

The Necessity for Preservatives

Because wood is subject to the attacks of decay and insects, its service life may be shorter than desired. The purpose of wood preservation is to provide practically permanent life. Thus, by treatment, the most common objection to the use of wood for structural projects is eliminated.

Decay of timber is caused by low forms of plant life called fungi. These fungi can only be destroyed with certainty by poisoning their food supply. THE WOOD PRESERVING CORPORATION does this by injecting approved preservative oils or chemicals into the wood under pressure.

Termites are the most commonly known and most destructive of wood destroying insects. Usually the wood preservative treatments that are effective against decay are effective also against termites.

Marine Borers attack and destroy wood submerged in salt water. Since they use the wood for shelter only, not for food, protection against marine borers presents different problems than in the case of decay or termites, and the only effective protection is heavy treatment, under pressure, with coal tar creosote.

The Necessity for Pressure Treatments

Wood preservatives must penetrate well into the wood, to be effective. Surface applications by brush, spray or dipping are not always effective, because the penetration is slight and the penetrated shell may be broken through by subsequent checks or abrasions and the untreated wood is then exposed to attack.

Timber Ready for Pressure Treatment

Salt-treated Sub-flooring Laid on Creosoted Stringers and Nailing Strips

All treated wood from THE WOOD PRESERVING CORPORATION is pressure treated by either the Full-cell (Bethell Process) or the Empty-cell (Lowry or Rueping Process). The type of process to be used depends upon the species of timber, its state of seasoning, and the purpose for which the timber is to be used. THE WOOD PRESERVING CORPORATION has a large technical staff, qualified to advise you fully about this.

Pre-Fabrication of the Wood

While the penetration of preservative treatments into wood under pressure is adequate for protection, complete penetration is not possible in all species. If timber is cut after treatment, there is danger of exposing untreated portions to attack. For this reason, all framing, forming or fabricating should be done before treatments. THE WOOD PRESERVING CORPORATION has plants equipped with modern woodworking machinery with which all fabrication can be done economically. The common practice is to furnish sketch or blueprint giving all dimensions for the timber. When the cutting of treated timber on the job is unavoidable, all newly-exposed surfaces should be given two coats of hot creosote.

Economics of Treated Wood

Railroads, public utilities and large industrial companies have used treated timber most continuously and most effectively, and there are abundant cost records showing the results of the use of treated wood as against untreated. Pressure-treated poles, piling, ties and other forms of wood structures are now in service after 30, 40 or more years of useful life.

The life of creosote pressure-treated wood may be estimated at a minimum of 25 years for the average industrial plant use (the average life of *untreated* wood for uses such as railroad ties is usually not over 5 years).

Cost of Treated Wood

A relatively small investment will provide all the treated lumber required for most buildings. For example—in the average small house calling for approximately 10,000 board feet of lumber, only certain parts need be treated, depending upon the construction. In such a structure an investment of $150.00 for treating the necessary lumber will often provide ample protection against decay and termites, and this is only a small percentage of the entire cost of the building.

The Use of Sapwood vs. Heartwood

Under certain conditions it has been the practice to specify a large percentage of heartwood content in lumber, to obtain longer life from untreated wood. Because of the increasing scarcity of this grade of lumber, it is steadily becoming more costly. Technical Bulletin No. 479 of the U. S. Department of Agriculture says:

"In the many tests which have been made on the various species of wood, no effect upon the mechanical properties of most species due to change from sapwood to heartwood has been found. In general, the conditions of growth that prevail when wood is first formed determine its strength properties; and whether heartwood or sapwood is the stronger depends on those conditions. Consequently, in one tree the heartwood may excel; and in another of the same species, the sapwood. Thus the heartwood of the Southern pines and of Douglas fir is not, as has often been supposed to be the case, intrinsically stronger than the sapwood."

While heartwood is more resistant to decay, it is not as readily penetrated by a preservative. Pressure treated sapwood is more durable than untreated heartwood; and the longer life given by deep penetration makes it desirable to have treated timber with a large content of sapwood. Thus, less expensive grades of lumber can be used instead of the more costly heartwood.

Types of Treated Wood for Various Uses

Treated timber can be used profitably for new construction or repair wherever timber is a suitable building material. The kind of wood best adapted to specific purposes depends upon both the requirements of the job and the availability of various species.

For example: Southern pine, Douglas fir, and oak are suitable materials for round piles. In the Eastern part of the country, however, Southern pine is most abundant in the sizes normally required, and it is used to a much greater extent than the other species mentioned.

Since local conditions of supply and use may alter the recommendations for timber, it is advantageous to consult the treating plant before any particular species or grade of wood is specified. Engineers of THE WOOD PRESERVING CORPORATION will gladly assist in formulating specifications for both the material and its treatment.

For structural timbers, Southern pine, oak and Douglas fir are suitable. Purchase should be based on price, if no unusual requirements exist.

For small structural lumber, siding, roofing, etc., Southern pine is generally best suited. It is easily nailed and not difficult to keep in place.

For platforms, crossing plank and similar installations where mechanical wear is severe, black gum is most desirable. The oaks and mixed hardwoods also will give satisfactory service.

For cross ties, switch ties, and bridge ties, any of the common species are used. The species generally used for industrial ties are the oaks, mixed hardwoods and Southern pine.

For cooling towers, coarse pine and Douglas fir are most suitable on account of their light weight.

Where Treated Wood Should Be Used

A complete list of the places in which preserved lumber is especially useful is unnecessary here, but in brief, these may be described as any portions of a structure in contact with or near the ground, in damp or poorly ventilated basements, or in contact with other timbers or with masonry girders, joists, stringers, subflooring, window frames, roof timbers, and shingles. In such places decay is certain if moisture accumulates in the wood, and in some localities attacks by termites soon destroy such timbers and make replacement necessary.

Creosoted Stringers and Understructure Timbers for Residences Resist Decay and Termite Attack

Salt-treated Sub-flooring Being Laid Over Creosoted Joists

8
7

APPALACHIAN HARDWOOD MANUFACTURERS, Inc.

REPRESENTING THE GREATER PROPORTION OF APPALACHIAN HARDWOOD PRODUCTION

414 Walnut Street, CINCINNATI, OHIO

APPALACHIAN OAK

FOR FINE ARCHITECTURAL WOODWORK

Appalachian Hardwood Region and Products

The Appalachian Hardwood Region is that mountainous area extending southwesterly from Pennsylvania to Georgia, as illustrated in the shaded portion of the insignia to the right.

In this region more than 2,000 sawmills each year normally produce in excess of one billion board feet of splendid Appalachian hardwood lumber, including Oak, Yellow Poplar, Chestnut, Cherry, Basswood, Birch, Beech, Maple, Ash, and other species, as well as Oak, Beech and Maple flooring.

Characteristics of Appalachian Oak

Favorable growth conditions affecting Appalachian hardwood timber impart unusual qualities to Appalachian Oak, long regarded as an ideal material for fine architectural woodwork. Rich soil, good drainage and temperate climate endow Appalachian Oak with superior seasoning and working properties. The same factors are responsible for the slow, steady growth, which in turn produces the fine grain and uniform texture and color that make Appalachian Oak *unexcelled* for the manufacture of hardwood products in which both *beauty* and *serviceability* are desired.

Availability of Appalachian Oak

Appalachian Oak lumber is widely distributed, and is readily available to architects through planing mills and cabinet makers. Each year hundreds of millions of feet of Appalachian Oak reach consuming markets through the usual channels of distribution.

Grades and Effects

Appalachian *White* and *Red Oak* are available in all standard commercial grades and sizes, which include material for every purpose and effect of interest to architects. These grades offer many interesting and decorative possibilities.

Appalachian White Oak is obtainable in three grain effects: (a) *Plain sawn* or flat grain, (b) *Rift sawn* or comb grain, and (c) *Quarter Sawn* or flake figure. See illustrations below.

Plain sawn Appalachian White Oak woodwork can be furnished in both the *Clear* and *Knotty,* or *Antique* effects. *Rift* and *Quarter* sawn Oak woodwork is available in the *clear* effect only.

Appalachian White and Red Oak also are made into veneers of standard thicknesses of from 1/28 to 1/4 in. and can be obtained in three forms: (a) *Sliced.* (b) *Sawn* (both sliced and sawn available in flat grain, comb grain and quartered effect). (c) *Rotary* cut. *Sliced* or *sawn* veneers produce the finer grain pattern. *Rotary* cut veneer, due to manner in which the sheet of wood is removed from the log, is characterized by a pronounced grain figure. For a fine, subdued grain pattern specify *sliced* or *sawn Appalachian White Oak* veneer, depending on the desired thickness and purpose of veneer.

Distinguishing White from Red Oak

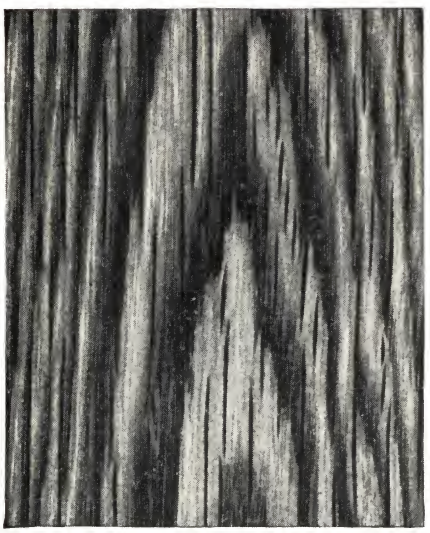
The distinguishing features of *White* and *Red Oak* lie in their grain and color. Red Oak usually has a coarser grain and a distinctly more reddish tinge, especially near knots. For more accurate methods of identifying these woods when in doubt the following are suggested:

(a) With a sharp knife cut away a portion of the *end grain* of the piece of Oak in question, thus exposing the pores between growth rings. If pores, under a strong magnifying glass, are open, distinct, and can be counted readily, the wood is Red Oak. If pores are closed, indistinct and difficult to count, the wood is White Oak.

(b) Examine under a magnifying glass the flat surface of a piece of freshly planed but not sanded Oak. In the pores

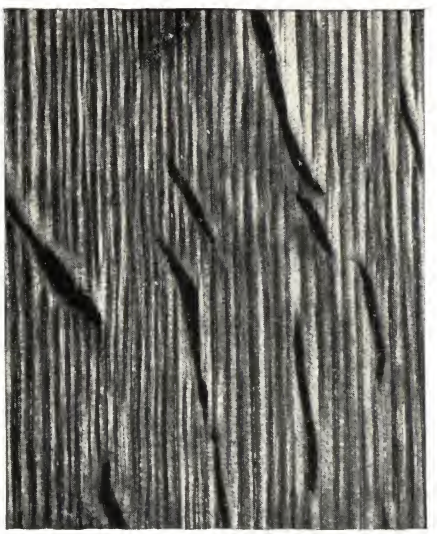
Typical Effects Available in Appalachian White and Red Oak

Scale of Grain Pattern FULL SIZE for First Four Illustrations



To obtain this effect specify "clear, plain sawn *Appalachian* White Oak"

This effect obtained by specifying "clear, rift sawn *Appalachian* White Oak"



Specify "clear, quarter sawn *Appalachian* White Oak, small flake" to obtain this effect

To obtain this effect specify "clear, plain sawn *Appalachian* Red Oak"

Specify "*Appalachian* White Oak with wormholes and sound knots" to obtain this *antique* effect

Specify "*Appalachian* Chestnut with wormholes and small sound knots" to obtain this *antique* effect

of White Oak a glistening, amber-colored substance *(tyloses)* will be present, whereas little or none of this substance will show in Red Oak.

(c) Smoke can be blown through a piece of Red Oak. This is not possible with White Oak.

(d) The medullary rays are longer in White Oak.

Importance of Specifying "Appalachian"

Growth conditions have a pronounced effect on the appearance and quality of Oak. Those in the Appalachian territory cause Oak to develop slowly, and consequently produce the *narrow* annual rings that are indicative of *fine grain.* In some other regions growth conditions cause more rapid tree development and Oak grown there is characterized by *wide* annual rings, *coarse grain,* and a much denser wood substance.

Standard rules for grading hardwoods *do not define* character of grain, quality of texture, kind of seasoning or the working and finishing properties of wood. Therefore, to obtain Oak possessing the characteristics most desired, the architect should specifically describe the kind and quality of Oak required. The simplest and most effective way to do this is to specify "Appalachian" Oak. This specification offers assurance of receiving Oak of unsurpassed *beauty of grain and texture,* unrivaled seasoning and working properties, and unusual ability *to stay in place* after installation.

How to Specify "Appalachian" Oak

The word "Appalachian" should precede the name of each wood specified, such as *Appalachian* White Oak, *Appalachian* Red Oak, etc. The term *Appalachian* identifies the *source* as well as the *character* of the Oak specified and gives the architect assurance of obtaining the desired effects.

The use of the term *Appalachian* usually is permissible in specifications on Federal and State projects. When the name itself cannot be used, Appalachian Oak can be obtained by means of *description* and *use of samples.*

In addition to using the word *Appalachian,* the following points should be considered in specifications:

(1) Character of Lumber—Specify if woodwork is to be *White* or *Red* Oak (the latter being slightly cheaper) and if it is to be (a) *Clear* or (b) *Sound Knotty,* often called *Antique.* Indicate whether or not characteristics, such as knots, burls, wormholes, etc., are to be with or without limit.

(2) Grain Effects—Specify if Oak is to be (a) *Plain sawn,* (b) *Quarter sawn* or (c) *Rift sawn.* See illustrations. *Rift* sawn supplied only in *White* Oak.

(3) Types of Panels—Specify if panels are to be (a) Solid Wood or (b) Veneered. Indicate number of veneer plies. Specify *Appalachian Chestnut* or *Yellow Poplar* for panel cores and *Yellow Poplar* for cross banding.

(4) Kind of Veneers—Specify if veneers are to be (a) *Sliced,* (b) *Sawn* or (c) *Rotary* cut. Indicate thickness.

How to Recognize Appalachian Oak

Since rough hardwood lumber is a raw material subject to several manufacturing processes before it becomes finished woodwork, the branding of hardwoods, from the ultimate consumer's point of view, is an inadequate means of identification. Therefore, not all Appalachian sawmills brand Oak and other hardwoods. When used, the brand mark is AHL imprinted on one end of each board.

Appalachian Oak usually can be identified by its own exclusive characteristics. Once architects, through handling or using Appalachian Oak, become familiar with its beautiful grain, its fine texture and other excellent qualities, these serve as unmistakable brand marks. To architects who desire to become acquainted with Appalachian Oak and to be able to recognize on *sight* this outstanding cabinet wood, samples will be supplied.

Certificate of Origin

Members of Appalachian Hardwood Manufacturers, Inc., gladly will supply at no additional cost a *Certificate of Origin* on all carload shipments of hardwood lumber and flooring. Instruct subcontractors to submit this certificate as evidence of compliance with specifications.

Obtaining Uniformity in Woodwork

To obtain uniformity in the grain pattern, texture, color and finishing qualities of Oak woodwork, it is necessary the specifications be *very explicit* as to kind and quality. The following procedure is suggested:

(a) Specify that *all Oak* lumber and veneers used by various subcontractors be *Appalachian.*

(b) Have thorough understanding with each subcontractor regarding the *character* of *Oak* to be furnished by *showing him samples* of *Oak* required and insisting that *he submit samples* of *Oak* he intends to use.

(c) Where practical, have *one* subcontractor supply all the *Appalachian* Oak lumber and veneers from whom other subcontractors may obtain their Oak requirements.

Appalachian Oak Products

Interior Trim, Cabinet Work, Stair Cases and Treads, Panels, Veneers, Doors, Flooring, Carvings and Timbers available through local distributors.

APPALACHIAN OAK FLOORING

FOR NAILED AND MASTIC INSTALLATION

Appalachian Oak Flooring long has been renowned for its excellent quality and beauty, no less than for the enduring service and satisfaction it gives. Millions of feet of this flooring are manufactured annually and may be obtained through flooring contractors and lumber distributors.

Kinds, Grades and Sizes

Strip—Available in White and Red Oak in *plain and quarter-sawn stock* in standard grades of *Clear, Select, No. 1 Common and No. 2 Common.* Thickness 25/32 in. and face widths 1½, 2 and 2¼ in. Stock ⅜ in. x 1½ and 2-in. face widths is made for *resurfacing old floors.* Sold on board foot measures.

Parquetry—*For Nailed Installation*—Available in White and Red Oak, *plain* and *quarter-sawn* tongued and grooved stock for *squares, herringbone* and *other* patterns and in standard grades of *Clear, Select, No. 1 Common,* and *No. 2 Common* stock furnished in 25/32-in. thickness, 1½-in. face width and 9, 12, 15, and 18-in. lengths. Also, 2-in. face *width* by 8, 10, and 12-in. *lengths* and 2¼-in. *face width* by 9, 11¼, 13½, 15¾ and 18-in. *lengths. No. 2 Common grade* furnished only in mixed White and Red, plain and quartered stock. Sold on square foot surface measure.

For Mastic Installation—Supplied in same grades and sizes as parquetry stock to be nailed. Specify that stock for *mastic* installation shall have *flat back* and be *specially milled* for mastic. Sold on square foot surface measure.

Plank—*For Nailed or Mastic Installation*—Available in tongued and grooved *solid* boards for nailing only and *three-ply* planks for nailing or mastic in *plain* and *quarter-sawn* White Oak or *mixed* in *First, Second,* and *Antique* grades, the latter at approximately the same price as *Second* grade. Standard *thicknesses* 25/32 in., widths 4-in. and up. For *solid* planks specify 4 to 8 in., inclusive. For *three-ply* with Oak face and Chestnut core and back, widths from 4 to 26 in. may be used successfully. The assortment of widths furnished is approximately an equal number of square feet of each width. Ends of planks are either grooved with splines furnished or tongued and grooved. *Solid* planks furnished with *square* or *beveled edges.* Three-ply with *square or beveled edges* or *crack line.* Plugs, keys and back painting at additional cost. *Keys* furnished with *three-ply* stock. Sold on net square foot surface measure.

How to Specify

Wood Sub-floor—For nailed strips, parquetry and planks, the sub-floor shall consist of 1 x 6 -in. No. 2 Common *square-edged, thoroughly kiln-dried,* boards, surfaced to 25/36-in. thickness and *face* nailed at each joist with *two* 8d flat head, coated nails. The ends of each board shall rest firmly on the joist and a space of ¼-in. shall be left between boards to prevent their buckling and squeaking in case of swelling. The sub-floor boards shall be laid diagonally (45°) to the joist for strip, block and plank flooring and at *right angles* to joist for the herringbone, block or other pattern whose design will run *diagonally* to the walls. Double-sized, asphalt impregnated, moistureproof building paper of at least 30 lbs. per square, lapped 3 in. at the joints, shall be laid over the sub-floor.

Concrete Sub-floor—*For mastic installation* the concrete base shall be *wood floated* to a true level and a smooth surface not less than 1/16 in. below level of finished floor line. All projections and rough places shall be ground off and all waste shall be removed. Before any flooring is laid the concrete shall be *clean* and *thoroughly* dry.

Hardwood Flooring—Oak flooring for *mastic installation* shall be manufactured of properly air-seasoned, thoroughly kiln-dried Appalachian White (or Red) Oak *specially milled* with flat back and grooves for mastic. In areas hereafter indicated, and in accordance with instructions of supervising architect, the flooring contractor shall furnish, lay, scrape and finish Oak flooring as follows: (State here areas, kind, pattern, grades, size, width of border, if any, and finish desired.)

Mastic—The mastic shall be properly prepared asphalt, (hot or cold) with proven adhesive qualities. If hot mastic is used, the concrete floor shall be given a priming coat of asphaltum paint to insure adhesion of the mastic and flooring to the concrete.

To Determine Amount of Flooring Required

Strip Flooring—For 25/32x2¼-in. stock determine area in square feet to be covered and add one-third. For 13/16x1½-in. stock add one-half. For ⅜-in. stock add *one-third* for 1½-in. face width and *one-fourth* for 2-in. face width. Add 3% additional for mechanics' waste for all face widths and thicknesses.

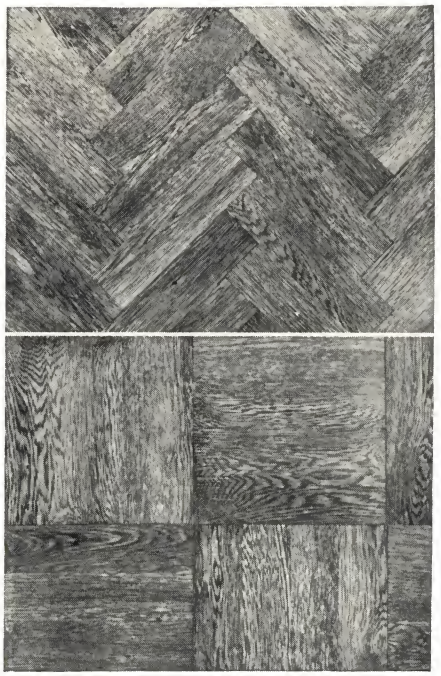
Parquetry Flooring—Determine area in *square feet* to be covered and add 3% for mechanics' waste.

Plank—Determine area to be covered in *square feet* and add 3% for mechanics' waste.

Caution

For dependability, specifications should call for an experienced flooring contractor to install *parquetry and plank* flooring.

To obtain above effect specify *"Appalachian* 25/32 x 2¼ in. *clear* plain White Oak flooring." Available in several grades, in both White and Red, plain and quartered stock



To obtain effects similar to above specify *"Appalachian* 25/32 x 1½-in., 2 or 2¼-in. clear, plain White Oak flooring" in either herringbone or squares, indicating lengths desired and whether for mastic or nailed installation

Specify *"Appalachian* 25/32 in. first grade, plain White solid or three-ply Oak planks, random widths." Also available in *quarter-sawn* and *antique* effects

APPALACHIAN YELLOW POPLAR

FOR PAINTED AND ENAMELED WOODWORK

Appalachian Yellow Poplar, sometimes incorrectly called "Whitewood", is one of the most serviceable and dependable of our native hardwoods. It has been prized for fine painted or enameled woodwork since early Colonial days.

Characteristics of Appalachian Yellow Poplar

Appalachian Yellow Poplar has a straight, fine grain and uniform texture. Its heartwood is greenish yellow and durable. The sapwood is white.

Workability—The workability of Appalachian Yellow Poplar is unexcelled. The ease with which it can be seasoned, surfaced and turned into desired shapes and sizes with smooth surfaces and edges and ability to retain its shape and dimensions after being worked have made it a choice cabinet wood. Moreover, it rivals the best woods from the standpoint of gluing. Its fine, uniformly porous texture absorbs glue evenly, resulting in strong joints. Appalachian Yellow Poplar is one of the easiest of our native woods to nail without splitting.

Paint and Enamel Holding Qualities—These qualities of Appalachian Yellow Poplar are unsurpassed for the following reasons: (a) *It holds an enamel finish more securely* than do either the softer or the harder woods because of its uniformity of texture and an optimum degree of porosity and hardness which makes for ideal enameling purposes. It mars less easily than the softer woods and, in the case of a sharp blow, the enamel will not flake from Yellow Poplar as readily as from the harder woods. (b) *Its grain pattern will not raise and show through the finish* because it possesses no dense bands of summer wood. Enameled Appalachian Yellow Poplar will remain smooth permanently. (c) *It contains no oils or resins* to "bleed" through and ruin the finish.

Ability to Remain in Place—This is another excellent quality of Appalachian Yellow Poplar. It is remarkably free from injurious swelling and shrinking and the resultant warping, twisting and splitting due to its uniform texture, moderate density and a natural resistance to expansion and contraction with changing atmospheric conditions.

Availability—Grades and Sizes

Approximately 150 million feet of Appalachian Yellow Poplar are manufactured annually, and the lumber is available through planing mills, cabinet makers and woodworkers. It is produced in all standard lumber grades common to this species and in all sizes and for all purposes and effects of interest to the architect. Standard commercial rough thicknesses range from 5/8 to 4 in. and in width from 3 to 18 in. for lumber and 18 to 33 in. for panel stock. Standard maximum lengths 16 ft. Special stock is cut on specification. Kiln-dried rough Appalachian Yellow Poplar will surface and sand smooth to the following finished thicknesses:

1 -in. rough to 25/32-in.	1½-in. rough to 1 5/8-in.
1¼-in. rough to 1 1/8-in.	2 -in. rough to 1¾-in.

Appalachian Yellow Poplar also is available in mouldings, plywood panels, veneers of all commercial thicknesses and in crossbanding for panel cores.

Cost of Appalachian Yellow Poplar

Appalachian Yellow Poplar for enameled woodwork is *not expensive*. It costs *less* than most of the hardwoods used for this purpose and, in many localities, it may be had in custom woodwork for the *same price* as White Pine. Its use results in more *real economy* and *lasting satisfaction* than can be obtained from those woods having a lower first cost.

How to Specify

Specify *"Yellow Poplar"*, and not "Whitewood". Several species of hardwood and softwood, somewhat similar to Yellow Poplar in appearance but much inferior for enameled woodwork, are often supplied on specifications calling for "whitewood."

Specify *"Appalachian Yellow Poplar"*. To be assured of obtaining Yellow Poplar possessing superior *working, staying* and *enameling* qualities for which this wood is noted, specify *Appalachian* stock.

Certificate of Origin—Members of the Appalachian Hardwood Manufacturers Association will supply without cost a *Certificate of Origin* on all *carload shipments*. Specify that this certificate be submitted by sub-contractors as evidence they have complied with the specifications. This certificate is available on *all* Appalachian hardwoods and hardwood flooring shipped by members of this Association.

Horizontal board paneling in a semi-moderne living room for which *Appalachian Yellow Poplar* is ideal. Leo F. Bachman, Los Angeles, Architect

For the Finer Projects—Specify "the interior trim shall be made of thoroughly kiln dried, clear *Appalachian Yellow Poplar,* except for sapwood and mineral stain."

For Utmost Economy—Specify "thoroughly kiln dried *Appalachian Yellow Poplar* admitting sapwood, sound sap stain, mineral stain, occasional burls, tight pencil knots and other similar small, smooth defects which can be readily and properly covered with paint or enamel and which *in no manner* will affect the finish holding qualities of the wood."

Paint Specifications—The prime coat tinted a *light dove gray* shade facilitates obtaining uniform coverage and color-effects and often results in the *saving of one coat of enamel.* For the *best* results, specify: "all interior woodwork to be enameled shall have the prime coat applied *on all sides* by the painter *before* it leaves the plant of the woodwork fabricator". Woodwork to be installed against masonry or outside walls should be *back painted* with a heavy coat of white lead and oil to minimize absorption of moisture. No interior trim should be taken into a new building until the structure has become *thoroughly dry.*

ARKANSAS SOFT PINE BUREAU

LITTLE ROCK, ARK.

Products

ARKANSAS SOFT PINE PANELING; INTERIOR FINISH; MOULDINGS; RIFT (quarter-sawn) CLOSE GRAIN FLOORING in End-matched and Plain End; COMMON LUMBER.

Sold by

Local retail lumber dealers and planing mills east of the Rockies. Elsewhere by special arrangement.

Individual Advantages

Arkansas Soft Pine is the highest quality Shortleaf southern pine, known botanically as Pinus Enchinata.

Due to its unique individual qualities—namely, freedom from pitch, light weight, soft lustrous texture and fine grain—the wood enjoys marked preference, particularly for paneling, woodwork and all trim and moulding details where a close grained, readily workable wood is required.

General Uses

Arkansas Soft Pine in common grades provides dependable, thoroughly seasoned framing material for residences, stores, apartments, churches and buildings of like character.

Specific Uses

For Paneled Walls—In both informal and formal designs. Correctly seasoned, kiln dried material. Clear rather than knotty stock is recommended for soft, mellow effects of exceptional beauty.

To Specify Paneling—Designate Trade- and Grade-Marked Arkansas Soft Pine in B & Better grade, worked to detail as per standard patterns described in the Arkansas Soft Pine panel book (copy including work sheets, on request). These patterns include various designs in Early American and modern motifs, worked tongue and groove with a choice of V-joint and other simple moulded edges. Vertical (plank) is available in random widths of 5¼, 7¼ and 9¼ in., respectively. Cornice and base treatments include a variety of assemblies from standard mouldings and trim as per detail sheets furnished with the Bureau's panel book.

While installations may be made over furring strips attached to the studding, a sub-wall of center and end-matched Arkansas Soft Pine kiln-dried sheathing provides a more substantial and satisfactory construction.

Satin-like Interior Trim—It is from the thick, clear sap wood with its fine, lustrous texture and absence of resinous oils that the famous quality Arkansas Soft Pine is manufactured. *For enamel, stained or dull wax rub finishes this wood is eminently satisfactory.*

Flooring — Arkansas Soft Pine Flooring is available in approximately ten grades: Rift (quarter-sawn) of the close grained variety, cut from the heart of butt logs is a superior flooring for residential, apartment, store and school installations. Preferred pattern in standard sizes measures $\frac{25}{32}$-in. thickness by 2⅜-in. face and runs from 8 to 20 ft. in length, the greatest percentage being from 10 to 16 ft. When laid, these lengths entail comparatively few end-joints, producing a smooth sweep of finished floor. Arkansas Soft Pine Flooring will take any desired treatment in stains, varnishes or wax, and provides a long-wearing floor of exceptional merit.

Genuine Arkansas Soft Pine

Is Trade-Marked with the symbol appearing at the top of this page, and Grade-Marked in accordance with the recommendations of the Central Committee on Lumber Standards. These brands guarantee standard grades, scientific drying and seasoning, and correct handling.

GRADE

MARK

This Grade Mark Is Your Guarantee of Standard Quality Correctly Seasoned Lumber and Woodwork

Technical Data and Information

The Arkansas Soft Pine Handbook contains complete grading rules, standard moulding designs, including *numbers endorsed by the American Institute of Architects* in conjunction with the Central Committee on Lumber Standards; also lumber actuary, shipping weights, painting and finishing instructions, and concise description of the wood. Copy of this Handbook and the Bureau's panel book will be furnished to specification writers on request, together with natural and finished samples. Address all requests to the ARKANSAS SOFT PINE BUREAU, Boyle Building, Little Rock, Arkansas.

Member Companies

All stock bearing the Arkansas Soft Pine trade-mark is manufactured and sold exclusively by the following companies, and is merchandised and distributed through local retail dealers and planing mills:

BRADLEY LUMBER CO. OF ARKANSAS, Warren, Ark.
CADDO RIVER LUMBER CO., Glenwood Ark.
Sales Office: R. A. Long Building, Kansas City, Mo.
CROSSETT LUMBER CO., Crossett, Ark.
DIERKS LUMBER & COAL CO., Dierks, Ark.
Sales Office: Dierks Building, Kansas City, Mo.
FORDYCE LUMBER CO., Fordyce, Ark.
FROST LUMBER INDUSTRIES, INC., Shreveport, La.
Plant: Huttig, Ark.
SOUTHERN LUMBER CO., Warren, Ark.

Arkansas Soft Pine for Interior Paneling (Dutch Colonial Design)

*A special brochure on Arkansas Soft Pine paneling installations, including detailed work sheets for three styles of panel design will be furnished on request.

CALIFORNIA REDWOOD ASSOCIATION

405 Montgomery Street
SAN FRANCISCO, CAL.

CHICAGO
Hammond Redwood Co.
The Pacific Lumber Co.
Union Lumber Co.
Redwood Sales Co.*

NEW YORK
Hammond Redwood Co.
The Pacific Lumber Co.
Union Lumber Co.
Redwood Sales Co.*

832 West 5th Street
LOS ANGELES, CAL.

SAN FRANCISCO
Hammond Redwood Co.
The Pacific Lumber Co.
Union Lumber Co.
Dolbeer & Carson Lumber Co.
Holmes Eureka Lumber Co.
Hobbs, Wall & Co.

SANTA CRUZ
Monterey Bay Redwood Co.

KANSAS CITY
Hammond Redwood Co.

155 E. 44th Street
NEW YORK, N. Y.

LOS ANGELES
Hammond Redwood Co.
The Pacific Lumber Co.
Union Lumber Co.
Dolbeer & Carson Lumber Co.
Holmes Eureka Lumber Co.
Hobbs, Wall & Co.

NEW ORLEANS
Hammond Redwood Co.

(For Redwood Fences, see File Index)

GENERAL CHARACTERISTICS OF REDWOOD

Durability

Rated by Forest Products Laboratory as one of three American softwoods whose heartwood is "durable even under conditions favoring decay."

Termite Resistance

Heartwood may be used without preservative treatment in portions of building liable to termite attack. The natural toxic element in Redwood is stated to be "four times as toxic as zinc chloride".

Shrinkage

Forest Products Laboratory in tests of all American commercial woods shows Redwood lowest in volumetric shrinkage. Correspondingly high ability to withstand tendency to cup, warp, twist, check or split.

Paintability

Redwood has high ability to take and hold paint coatings. Using uniform quality of paint, Forest Products Laboratory tests show integrity of coating on Redwood lasts as much as 40% longer than on other commercial species.

Natural Finish

Color, texture, and grain of Redwood are particularly well adapted for both interior and exterior uses in natural finishes. Examples such as Santa Fé Super Chief train, Sun Valley Lodge and Joseph Urban's designs may be cited.

*Address inquiries to Redwood Sales Co., San Francisco.

Nailing

Redwood does not require a special nail but because of the great durability of the wood itself it is recommended that a durable nail be used. For siding and exterior trim we recommend a hot dipped galvanized nail or a copper nail.

Screws

Redwood holds screws satisfactorily but care should be used when applying. Screws should be turned in with screwdriver and not driven in with hammer. The hammer method of applying screws in redwood tears down the cell structure and lessens the holding ability considerably. Brass or chromium screws for interior application present a novel and pleasing appearance.

Gluing

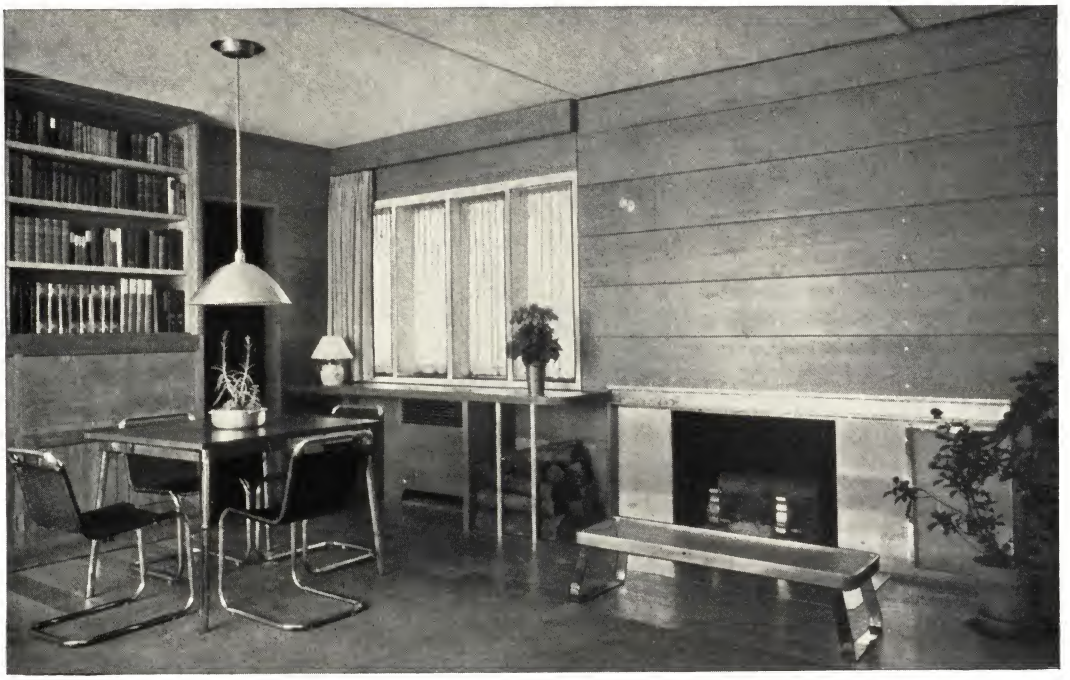
Because of the cellular structure of Redwood, glued joints are as strong as the wood itself.

Insulating Quality

Redwood ranks, by University of Minnesota tests, in upper 20% of American woods in thermal insulating quality.

Workability

Works easily. Smooth finish obtainable with hand or machine tools.



Twelve-inch Redwood Applied with Decorative Brass Screws—Residence of Robert M. Brown
Designed by the Owner.

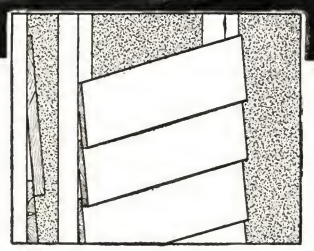
For special information on industrial or structural uses, or more complete information on any of the above points, write to the Association.

EXTERIOR USES

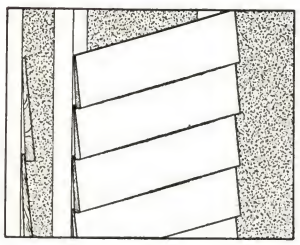
Siding

Natural characteristics of Redwood suit is particularly well for exterior use. It "stays put" due to low shrinkage factors. It is resistant to decay and insect attacks. It takes paint easily and holds it well.

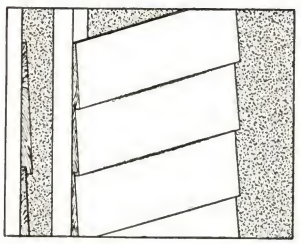
Because of the tremendous size of the tree, Redwood lumber is available in extraordinary widths. A great variety of stock patterns make it possible to attain unusual conformity to architectural style. A few of the available stock patterns are shown below. All stock patterns are illustrated in "Standard Patterns of Worked Redwood Lumber" which will be mailed on request. While definitions of various grades are given here, more detailed information will gladly be given to architects and specification writers upon application.



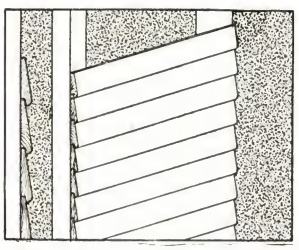
Anzac (S4S)
Widths: 6", 8", 10", 12", 14", 16"
Thickness: 1"
Laid with 1¼" lap. Weather groove, and spacing line.
To determine exposure deduct 1¾" from nominal size.



Square Edged Bevel Sidings (S4S)
Widths, 4", 6", 8", 10", 12"
Net size ½" less than nominal.
Thickness: Butt: ½", ⅝", ¾"
Tip: $\frac{3}{16}$"
Lap: As desired



Rabbetted Bevel Siding Square Edge (S4S)
Widths: 4", 6", 8", 10", 12"
Thickness: Butt: ½" to ¾"
½" from tip: $\frac{3}{16}$" to $\frac{5}{16}$"
Rabbetts: ½"
Exposed Widths: 1" less than nominal.



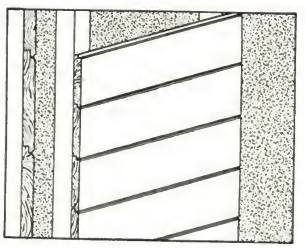
Round Edge Rabbetted Bevel Siding (S4S)
Same as above.

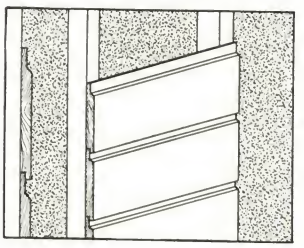
V Rustic (S4S)
Widths: 4", 6", 8", 10"
Thickness: ¾" and 1"
Exposure in shiplap: 1" less than nominal.
T&G Joints (1"x6" & 8" only) exposure $5\frac{3}{16}$" and 7⅛"

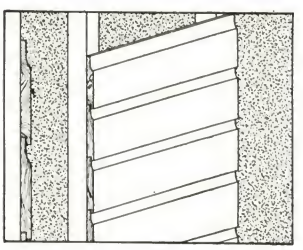
Shiplap Sidings (S4S)
Widths: 4", 6", 8", 10", 12"
Thickness: 1"
Exposure: 1" less than nominal.

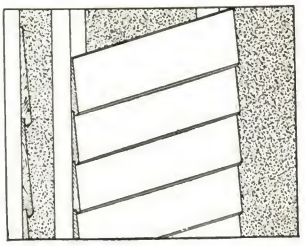
Channel Rustic (S4S)
Width: 10"
Thickness: 1"
Shiplap Joint: 9" exposure.

Cove Rustic (S4S)
Widths: 6", 8", 10"
Thickness: 1"
Shiplap Joint: Exposure 1" less than nominal.
Tongue and Groove (1"x6" only) 5¼" exposure.



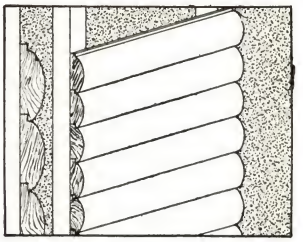


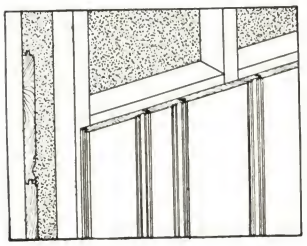




Economy Bevel Siding (S4S)
Widths: 5″, 7″
Thickness: Butt: ¾″
Tip: ¼″
Rabbett: ½″
Exposed width: 1″ less than nominal.
Available in square, bevel, and round edges.

Log Cabin Siding (S2S)
Widths: 6″. 8″
Thickness: 1″, 2″, 3″
Furnished in both shiplap, Tongue and Groove.
Exposure: Shiplap one inch less than nominal T&G—¾″ less than nominal.



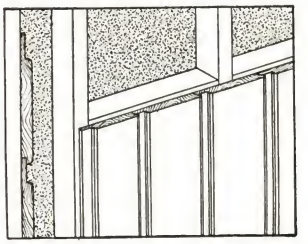


Tongue and Groove Vertical Siding (S4S)
Widths: 8″, 10″, 12″
Thickness: 1″
Exposure: ¾″ less than nominal.

Board and Batten
For same effects as above, but permits random width boards.
For each flush batten, add 2½″ exposed width.
For recessed batten add 1¾″ exposure.

Shiplap Vertical Siding (S4S)
Widths: 8″, 10″, 12″
Thickness: 1″
Exposure: 1″ less than nominal.

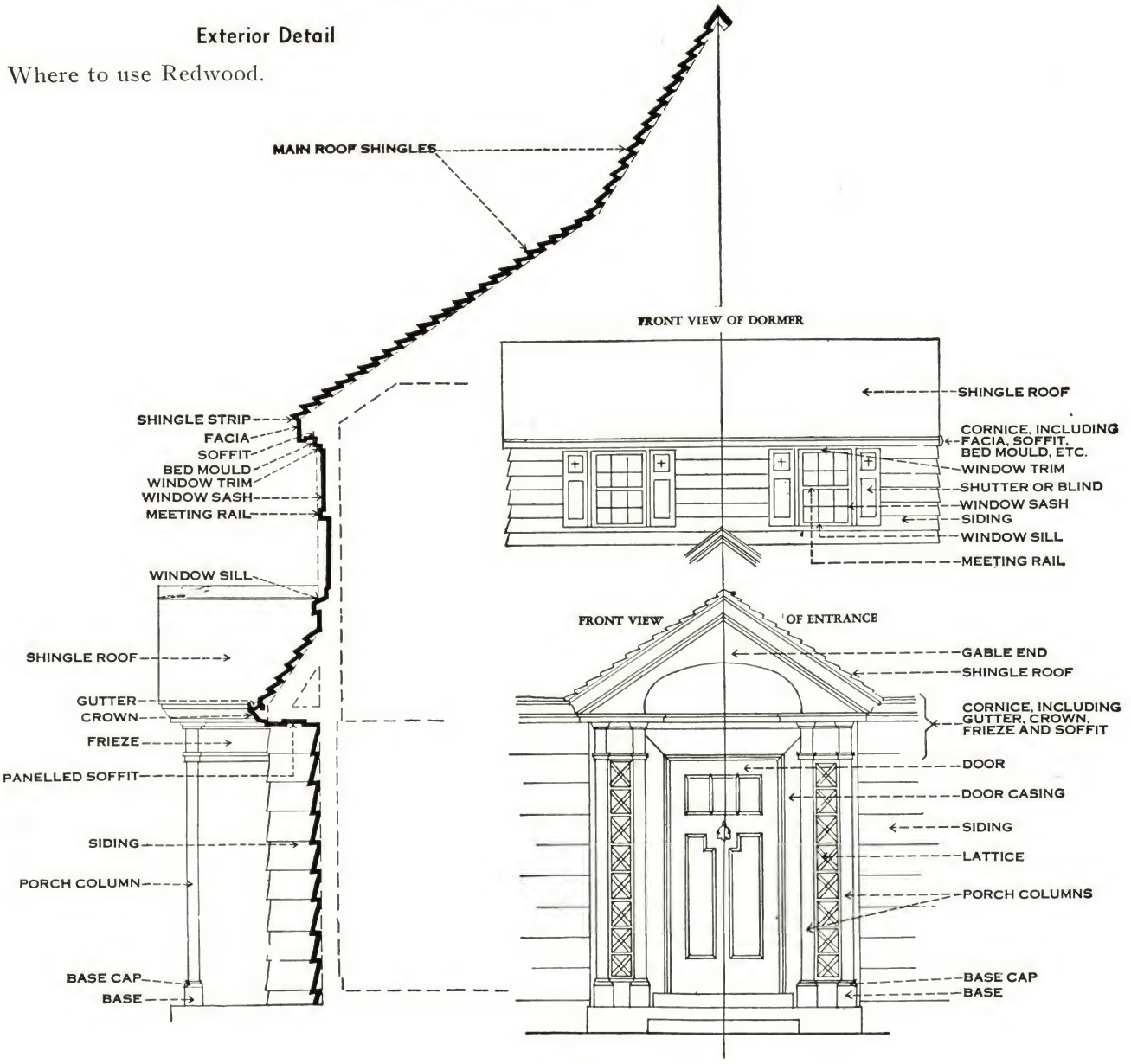
Moulded Vertical Sidings
Same sizes as above, either shiplap or tongue and groove.



NOTE: *All dimensions given above are nominal, except for exposures. For net sizes see pattern book.*

Exterior Detail

Where to use Redwood.



DESCRIPTION OF GRADES

Standard Yard Grades

Clear All Heart
A Grade
B Grade
Foundation Grade
Number One Heart Common
Number Two Common
Number Three Common

Character of Grades and Typical Uses

Clear All Heart Grade—The highest grade of lumber manufactured in California Redwood; a super grade, higher than any called for by American Lumber Standards. It is well manufactured from sound, live, all heartwood, and is selected for texture, appearance, milling and working qualities, as well as for freedom from sapwood, knots, pitch seams, etc. It may be used with confidence for the most exacting purposes. It is perfectly adapted to natural finishes and is used for the highest quality exterior and interior trim, sidings, paneling, ceiling, partitions, mouldings, and millwork. The natural preservatives contained in California Redwood insure maximum resistance to decay and insect attack. Its freedom from pitch and resinous substances insures long life to any decorative coating.

Clear All Heart Vertical Grain is a special selection from Clear All Heart. It shows 100% vertical grain when laid, is well manufactured, has no imperfections, and no sapwood.

"A" Grade—Practically free from knots, pitch, seams or other defects. It may contain a small amount of sapwood and individual boards may vary in texture, grain and appearance. It is suitable for natural finish where variations in color and appearance are desired, and for high quality painted exterior and interior trim, including sidings, rustic, ceiling, partitions and mouldings.

"B" Grade—Admits sapwood, discoloration, birdseye and occasional small tight sound knots. It is entirely suitable and practical for paint finishes, and natural finishes where variations in color and pattern are desired.

Foundation Grade—Grade marked lumber selected from No. 1 Heart Common for characteristics which ensure high resistance to decay and termite attack, and durability under severe service conditions.

No. 1 Heart Common Boards and Dimension—Well manufactured from sound live heartwood, and are recommended for use where strength and lasting qualities, rather than appearance, are important. This grade is also recommended for purposes where durable utility lumber is desired and for applications such as use in contact with the soil or exposed to the elements where high resistance to decay and insect attack is essential.

Wide Vertical Redwood Boards with Moulded Detail.

Residence designed by CHARLES M. MCCALL.

Character of Grades and Typical Uses (Continued)

It admits sound, tight knots up to the maximum of 1½ in. in narrow boards or 2½ in. in 12-in. widths. Sapwood is not permitted in this grade.

For Dimension in this grade, strength and durability are the primary considerations rather than appearance. Heart Common is manufactured in timber sizes and is widely used for heavy construction where the higher strength values assigned to Structural Redwood grades are not essential.

No. 2 Common—Suitable for use in ordinary construction and is available in the same sizes and workings as No. 1 Heart Common. Occasional knotholes, shakes, checks and sapwood are permitted. Maximum knot sizes are limited to 2 in. in the narrow widths and 3½ in. in the 12-in. boards.

No. 3 Common—The lowest grade manufactured in Redwood and is practically all marketed in local territory. It is suitable for temporary construction and for many uses which are not exacting.

Shingles

California Redwood Shingles, together with those manufactured from certain other durable woods, are manufactured in accordance with the requirements of Commercial Standard CS 31-33 of the U. S. Department of Commerce. This standard requires that No. 1 shingles shall be of 100% heartwood, well manufactured and neatly packed, all edge-grained; with no imperfections which in any way adversely affect the lasting qualities of the roof. No. 1 shingles are not less than 16-in. length, 3-in. width, and 2/5-in. thickness.

Redwood Shingles are bundled; four bundles being required to cover 100 sq. ft. of roof space, at standard exposures. No. 1 California Redwood Shingles are certified by the manufacturer under the supervision of the Inspection Department of the California Redwood Association. Shingles so certified may be identified by the Association label. The specification of Certified Redwood Shingles insures the use of the highest quality of wood shingles and the maximum amount of roof service per dollar invested.

Showroom, Lyons-Magnus Inc., San Francisco, Using Checkerboard Pattern of 14-in. Redwood Squares Albert F. Roller, Architect.

SPECIFICATIONS

Some of the greatest abuses in residential construction occur through the use of improper materials. The following specifications are formulated to eliminate the hazards of inadequate language and the substitution of inferior materials. Parenthetical notes are given for the guidance of the specification writer and not for inclusion in the specifications themselves.

Sills: General Framing

All sills, whether bearing on concrete, masonry, timbers, or natural earth, shall be *Foundation Grade Redwood,* or *No. 1 Heart Common Redwood.*

Sills where bedded in the earth shall be set on a firm and uniform bed at required grade, prepared to provide adequate drainage. Sills set on concrete or masonry shall be securely tied to foundation with bolts of sufficient size and lengths, or by closely spaced spikes driven into bottom of sill and then bedded in wet concrete to a firm and level seat. (The method of bedding sills and sill sizes are generally controlled by local ordinances or loaning agencies' requirements.)

Framing members including studding, plates, joists, rafters, sheathing, etc., shall be—Redwood (No. 1 Heart Common or No. 2 Common depending upon requirements; generally No. 1 Heart Common should be specified for all horizontal bearing members, such as girders, beams, joists, rafters, etc., and No. 2 Common for vertical members, such as posts, underpinning, studs, etc.) Plates shall be No. 2 Common Redwood.

Siding, Exterior Trim, and Finish

(The following specification outline is applicable to all exposed exterior finish.)

All Redwood shall be thoroughly seasoned for the purpose and worked to the specified and detailed dimensions. (Where special patterns are desired Redwood is available or can be obtained in any desired dimension or length.)

Care and Handling

All finish material shall be stored under cover and piled for easy selection and handling. Where storage is not available all material shall be covered with a waterproof building paper. (This protection will prevent moisture absorption, fading, discoloration due to sunlight and marring due to dust and soot. A mechanic does his best only with clear unsoiled materials.)

Prime Painting

(To obtain the best lasting qualities of wood siding and other exterior finish.) All material shall be prime coated (whether a painted, stained or natural finish is used) on all faces before application. During application all sawn or worked ends or edges shall also be primed. This prime coat will seal the material and prevent absorption of moisture and prevent future shrinking and swelling of the various members and also prevents marring of finished surfaces due to handling. (If, to create a saving, it is desired to prime only the face, it is important that rabbet, tongue and edges be primed, as this will prevent marring of finished surfaces due to moisture working under laps. This prime coat will also serve as the "first coat", and as it is done on the ground, a saving in labor will be created as more surface area can be covered than when working from a ladder, staging or falls. For the most satisfactory results only the best grades of paints or stains should be specified.)

Nails and Nailing

All exposed members shall be nailed with hot galvanized zinc coated nails of sufficient gauge and size to secure members adequately. Half-inch sidings and trim shall be nailed with 6d common or box nail. Three-fourths inch sidings and trim to be nailed with 7d common or box nail. (A special siding nail of mentioned sizes with a blunt diamond point that prevents splitting and a head that securely holds and countersinks clean is obtainable.) Nails shall be set (or driven flush if desired.) Finish nails shall be used on all small members such as mouldings. Setting nails and puttying holes is preferable as it is difficult with paints or stains to conceal entirely an unset nail.

(If any member has a tendency to split when common or box nails are used, especially at end cut, this can be prevented by flattening point of nail with the hammer before driving. This blunted point will crush the fibres of the wood instead of creating a wedging action.)

Building or Insulating Paper

All exterior siding or other finish shall be applied over an approved building paper or felt—(brand and weight to be specified) whether a sub-sheathing is used or not. Building paper shall be applied horizontally with at least a 4-in. lap at edge and a 12-in. lap at end where a sub-sheathing is used, and lapped one stud space if applied directly to frame. Tin washers shall be used to hold building paper securely and prevent tearing until application of siding or finish. One course at a time shall be applied and covered before application of next course. (It is a good practice to reinforce all internal and external corners and around frames with doubled vertical layer of building paper.)

Siding

(Redwood siding is available in various stock patterns; grades and widths to meet all architectural and use requirements.)

Siding shall be applied on sub-sheathing. In some localities it is satisfactory and acceptable to apply siding directly to framing members.

(To eliminate costly and unsightly plugging on Bevel and Anzac siding, when a sub-sheathing is not used, a cripple ¾ in. narrower than the stud, to receive window frame blind stop will allow siding to butt against the frame band mould, which in this detail can be a narrow pattern.) The first or bottom course of siding shall be furred out at butt edge with furring strip of sufficient thickness to maintain proper surface bevel. (This is not necessary in the case of rabbetted siding.) Following courses shall be placed so butt edge lines up with lower gauge mark near tip edge of under board. (In case of *plain* Bevel siding, specify here the desired lap.) (To simplify the lining up of each course, a jig may be made that abuts against butt edge of underlying course, and is of sufficient vertical length to gauge overlapping board to scored line. Siding should be coursed so that lower edge will line up with window or door head casing or other horizontal members.)

Nailing

Siding shall be nailed at every bearing but only near butt edge so that nail penetrates at tip edge of under course. (This method of nailing securely holds siding in position and will allow for any subsequent working of material, such as swelling and shrinkage, due to climatic changes, without causing checking. Where ends of board abut at bearing it may be necessary to obtain and maintain flush surface to face nail or sew nail. Sew nailing is done by slightly bending nail with claw of hammer and driving nail at angle so nail will enter adjoining member and turn towards the surface of adjoining piece without penetrating through. In the case of shiplap and rustic siding specifications should read: "Siding shall be nailed with two nails at every bearing".)

Corners

External corner of the siding shall be mitred and nailed only with finish nails (if a sharp arris is desired). (To obtain the correct mitre the mitre box, with reverse cuts, should be made of sufficient length to support the individual board its entire length. The upper face of back of siding should be plumb to obtain proper length. The upper face of back of siding should be plumb to obtain proper mitre. This may be obtained by a strip in corner of box to hold lower edge of board in same position as if overlapping tip of underlying board.)

(If coping of members is not desired) internal corners shall butt against a 1x1-in. vertical strip.

Anzac Siding

All exterior wall surfaces where shown shall be covered with Redwood Anzac siding————grade, pattern No. ————(or designate width required.)

Anzac siding shall be nailed with 7d hot galvanized steel box nails, heads set (if desired; refer to nailing specifications).

Bevel Siding (Rabbetted or Plain)

All exterior wall surfaces where shown shall be covered with Redwood siding————grade, pattern No.———— (or designate width required.)

Three-fourth inch sidings shall be nailed with 7d galvanized box nails and thinner siding with 6d galvanized box nails.

Shiplap and Rustic

All exterior wall surfaces where shown shall be covered with Redwood siding————grade, pattern No. ———— (or designate width required.)

(Where shiplap is tongue and grooved and of narrow widths, blind nailing will be sufficient, but in wide widths it may also be necessary to face nail.)

CORNICES, BAND MOULDS, WATER TABLES, WINDOW AND DOOR FRAMES, SASH COLUMNS, BALUSTERS, AND RAILS

Shall be Redwood————grade, pattern No. ———— (or as per special details.)

All gutters, moulds and other trim shall be machined to a smooth and uniform surface, and shall conform exactly to designated patterns (or submitted details).

SHUTTERS, TRELLISES, FLOWER BOXES, LATTICES, ETC.

Shall be Redwood————grade and of sizes shown (or as per details).

FINALLY

(It is of extreme importance that definite *grade, pattern* finished or rough *size* be clearly stated, and that specifications require material to be sufficiently seasoned*.) (*Seasoning of lumber can be obtained by either air or kiln drying.)

California Redwood Association is a non-profit organization, serving as a clearing house for technical and comparative data on California Redwood. It will undertake to supply any type of information to architects, draftsmen, and engineers. Much material is in printed form ready for mailing, such as "Structural Redwood," "Redwood Information Series," "Extend Your Home to All You Own" (Fences), "Redwood Agricultural Series".

Specific inquiries not covered by published material will be answered individually. Write the California Redwood Association, San Francisco, Los Angeles or New York.

MEMORANDA

DRIWOOD CORPORATION

ASSOCIATED COMPANY
IMPROVED OFFICE PARTITION CO., INCORPORATED

TELEPHONES
CHickering 4-0041-0042

280 Ninth Avenue
NEW YORK, N. Y.

Representatives in
Principal Cities

For Driwood and Telesco Office Partitions and Railings, see File Index

DRIWOOD PERIOD MOULDINGS IN ORNAMENTED WOOD

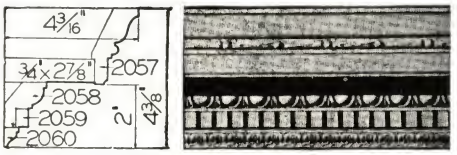
Driwood Period Mouldings in Ornamented Wood are authentic in design and architecturally correct and are *not composition or plaster.* Driwood Period Mouldings are made from Driwood Lumber scientifically air and kiln dried; they will not chip, warp or crack. Unlike hand-carved mouldings, Driwood Mouldings are moderate in cost and extremely economical for use in even the most elaborate decorative schemes.

DRIWOOD
TRADE MARK REG.

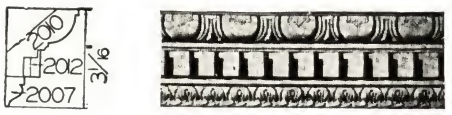
Driwood Period Mouldings have all the beauty and depth of hand carving. They will lend beauty, charm, distinction and richness reminiscent of the great mansions from which they derive their inspiration.

119 varieties of mouldings are available in poplar and red gum—the former being particularly useful for white or color work. The red gum can be stained to produce an excellent finish in either mahogany or walnut. Also furnished (to order) in genuine maple, walnut, oak, mahogany or pine. Supplied in lengths of 6 to 16 ft.

Ceiling Cornices



Assembly CC-15



Assembly CC-25

Assembly CC-29

Wall Panel Mouldings

Design 2117
Proj. 3/8"; 13/16" high

Design 2091
Proj. 9/16"; 1 3/4" high

Driwood Mouldings are restoring the demand for ornamented moulding for such uses as:

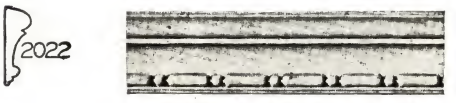
- Cornices
- Wall Panels
- Pilasters
- Chair Rails
- Ceiling Panels
- Picture Moulding
- Door Heads
- Bases

Special Designs to Order

A Service Bureau is maintained to co-operate with architects, interior decorators and others to determine the adaptability of Driwood Period Mouldings to specific requirements.

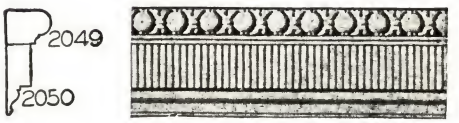
Special designs can readily be produced. Estimates furnished promptly without obligation.

Chair Rails



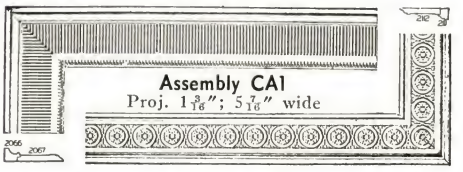
Assembly CR-3
Proj. 13/16"; 2 1/2" high

Assembly CR-4
Proj. 13/16"; 2 1/2" high



Assembly CR-6
Proj. 1 1/2"; 3 5/16" high

Door and Window Casings



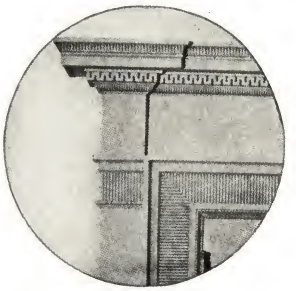
Assembly CA1
Proj. 1 3/8"; 5 7/16" wide

Assembly CA2
Proj. 1 1/16"; 4 1/2" wide

Left:
Door Head No. DH-2
Made entirely from Driwood Mouldings. Details on request

HENRY KLEIN CREATIONS

Right:
Door Head No. DH-1
Made entirely from Driwood Mouldings. Details on request



Only a few of the hundreds of styles of Driwood Period Mouldings are shown above
A Catalog of the Complete Line showing many Interesting Combinations sent on request

MAHOGANY ASSOCIATION, INC.

TELEPHONE
CENtral 8835

75 East Wacker Drive, CHICAGO, ILL.

What Is Genuine Mahogany?

Genuine Mahogany is derived only from several species of the Mahogany (Swietenioideae) tribe of the Mahogany family (Meliaceae), and is found only in the West Indies, America and on the west coast of Africa. No Mahogany grows naturally in any part of the Far East. Wood sold under the trade name "Philippine Mahogany" is not genuine Mahogany and is no more closely related botanically to genuine Mahogany than gum, birch or oak. Wherever there is any doubt as to whether the Mahogany supplied is in fact genuine Mahogany, samples may be sent to the Forest Products Laboratory of the U. S. Department of Agriculture, Madison, Wis., for identification.

West Indian Mahogany (Swietenia)—(Cuba, San Domingo, Haiti.) This is the hardest, heaviest, closest grained of all varieties of Mahogany, runs slightly richer and darker in color, comes from smaller, more defective trees and is specified where extra hardness or closeness of grain is desired.

Tropical American Mahogany (Swietenia)—(Mexico, Central America, South America, including Tabasco, Honduras, Nicaragua, Peru and the Amazon.) This variety is moderately hard and heavy but lighter in color and weight than West Indian. The trees are large and very free from defects.

African Mahogany (Khaya)—(Gold Coast, Ivory Coast, West Africa.) This variety averages lighter in weight and color and is not quite as hard or as close grained as American or West Indian. The trees are enormous and exceptionally free from defect. A very much larger proportion of the wood is figured than in other varieties.

Mahogany Lumber

For interior work and paneling American and African Mahogany are most frequently used, as these varieties are noted for fine lengths and widths and freedom from defects. FAS, clear face and strip grades are suitable for interior woodwork. Although Firsts and Seconds, in accordance with N.H.L.A. rules run 6 in. and wider, 8 ft. and longer, lumber 17 in. and wider is made, while, for special purposes, boards from 30 to 40 in. are available. Also lengths 17 ft. and up and even 25 ft. and up are produced. In thickness, stock up to 4 in. is regularly produced, and up to 6 in. is available.

Owing to the commercial availability and moderate cost of Mahogany lumber of good widths and lengths, solid Mahogany is frequently used in architectural woodwork and furniture. Mahogany is easy to work and scientific tests show that the wood shrinks less, expands less and warps less than any other fine cabinet wood in use today.

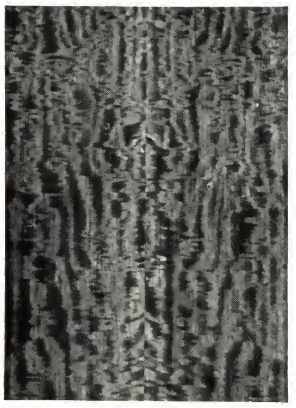
Figured Mahogany Lumber

Specially selected figured lumber is available in American and African Mahogany in grades of No. 1 Common and better. The premium for such stock is quite modest, and the lumber produces unusually beautiful cabinet work.

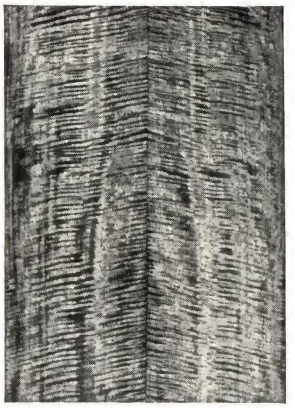
"After All—There is Nothing Like Mahogany"

Flat Cut

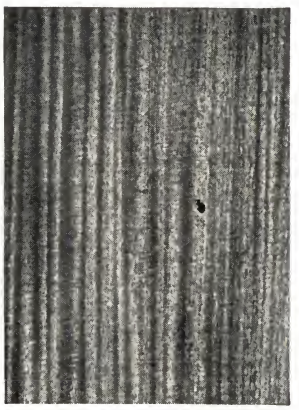
Figured Flat Cut



Mottle



Fiddle



Stripe

Broken Stripe

Crotch

Swirl

Mahogany Veneers

There is a great wealth of variety and figure in Mahogany. As is the case with lumber, lengths, widths and freedom from defect are characteristic of Mahogany veneers. No other cabinet wood offers the variety from which to make a selection. Many types are produced in quantity which makes possible large production cuttings of a uniform character of figure.

Standard sliced veneers are cut 1/28 in. thick. Sawn veneers most commonly are manufactured 1/20, 1/8, 3/16 and 1/4 in. thick. While other thicknesses can be obtained, these thicknesses offer by far the best selection. Where lengths greater than 16 ft. are required, it is necessary to use sawn veneers.

Mahogany Plywood

For information on Grade Rules, see Bureau of Standards document CS35-35 Plywood, Government Printing Office, Washington, D. C. Price 10c.

Quality in Cabinet Work

There are no official standards for fine cabinet work, but a safe rule is to employ a firm that has a record for doing fine work. On request, this office will supply a specimen specification form for Mahogany cabinet work.

Design in Mahogany

Through historical use and general acceptance, Mahogany is ideal for reproductions and adaptations of the 18th century masters. It is ideal for carving. With its rich, mellow appearance, beauty of grain and depth of figure, Mahogany also offers a striking medium for the sheer surfaces that are characteristic of Modern design. It is also ideal for combining with other fine cabinet woods such as satinwood or primavera. It is widely used for stair rails, base board, doors with painted trim and chair rails. It costs surprisingly little more than common woods. When Mahogany floors are specified, West Indian or Cuban Mahogany should be used.

Mahogany Finishes

Good finishing on Mahogany pays a large dividend in permanent satisfaction, while bad finishing may ruin the finest in design, material and workmanship. Mahogany is not a "red" wood and should not be stained that color. All *deep stains and high gloss surfaces should be avoided.* Factory-applied finishes under controlled conditions are superior to finishes applied on the job after installation. Modern technique in Mahogany finishes offers serviceable finishes that approximate the rich beauty so admired in many famous museum pieces.

These finishes, unstained or only lightly stained, ranging from sherry to a rich golden brown, flat or dull rubbed, bring out the full beauty of the wood. Such finishes permit the mellowing with age that is so pleasing in Mahogany. Bleached finishes or Blonded Mahogany are being used in modern designs.

Mahogany Doors

There is perhaps no richer or more interesting treatment on interior than to use rich Mahogany doors with painted woodwork or where woodwork has been eliminated, the light cream colored Georgian woodwork and paneling with paneled Mahogany doors is a classical style of rare beauty. There is no item in the woodworking field where the best materials and workmanship pay as big a dividend in satisfactory service as in doors of Mahogany. Mahogany, of all cabinet woods, is the least susceptible to atmospheric changes, therefore makes doors that keep their appearance and shape through the years. A wide choice in Mahogany doors is available, not only in traditional panel doors but also flush doors for the more modern type of rooms. Stock doors and stock woodwork of Mahogany may be secured from high grade manufacturers.

The Mahogany Book Second Edition

This 80-page brochure should be in every architect's office. Profusely illustrated, it gives full data on sources of supply, physical characteristics, woodworking properties, types of grain and figure, periods and utilization. The supply is limited so write for your copy today.

The Mahogany Labels

The MAHOGANY ASSOCIATION, INC., issues official labels to cabinetmakers producing a genuine Mahogany product. In specifying woodwork or paneling these labels prevent the possibility of substitution. Send for circular giving full details.

PAGE AND HILL CO.

Producers of Materials for Real Log Houses of Western Red Cedar

1015 Plymouth Building MINNEAPOLIS, MINN.

NEW YORK OFFICE: 50 Church Street

This "P & H" Real Log House in Ohio satisfies the owner's longing for a home of seclusion and charm

"P & H" HOUSES OF REAL LOGS—TRUE PIONEER TYPE

The widespread and growing interest in Real Log Houses has opened up a new field for architectural services. An individually planned Real Log House . . . combining the rustic charm and rugged simplicity of Early American woodcraft with today's standards of convenience, comfort and beauty . . . has long been the dream of thousands. This longing is now being satisfied, in all sections of the country, with the co-operation of architects in utilizing "P & H" log construction technique and "P & H" complete supply service.

Adaptable to Varied Needs and Ideas

"P & H" Real Log construction is readily adapted to a wide range of uses and needs—from small cabin to pretentious lodge—for comfortable year-round homes or delightful vacation retreats. Surprisingly practical for either permanent or seasonal residence—easy and economical to heat; delightfully cool in summer; low maintenance cost.

Readily Combined with Other Materials — With stone, brick, shingles, siding or other building materials for interesting architectural effects.

Properly Seasoned Logs

Meeting the requirements of architect's individual plans and specifications, "P & H" Service supplies properly seasoned Western Red Cedar logs accurately cut, fitted and numbered at the mill, millwork and built-in features ready to set in place . . . and any or all other materials required for a complete house.

All "P & H" logs are seasoned for at least two years . . . a basic requirement for successful log house construction. This is just one of many "P & H" features which assure the client in advance of complete and lasting satisfaction.

Erection under architect's own supervision or, if desired, PAGE AND HILL CO. can furnish a skilled supervisor or do the complete job of construction on the client's building site.

Distinctive "P & H" Structural Features

The distinctive and exclusive "P & H" construction was soundly developed to conform with modern building standards. It assures a strong, weathertight structure; it employs to best advantage the inherent qualities of seasoned Western Red Cedar logs—exceptional insulating efficiency and long life. Its features are readily adaptable to individual plans and to combination with other building materials.

The groove and spline construction makes an effective, permanently weathertight joint.

The patented interlocking corner construction makes a strong, rigid, insulated joint.

Window and door frames of Western Red Cedar are fitted snugly by grooving and splining into the ends of logs, and at top and bottom of frames, making a strong weathertight construction.

The above structural features and others shown in details on next page.

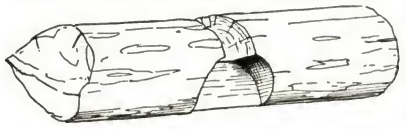
Confidential Service to Architects

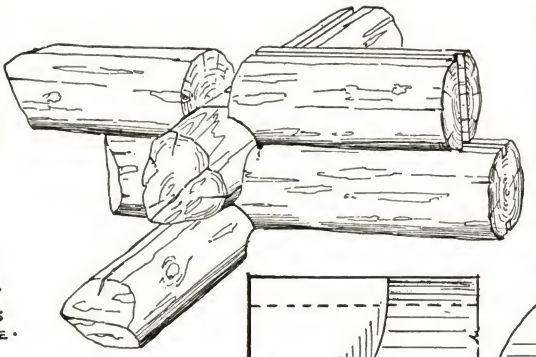
"P & H" log construction and supply service simplifies the planning and erection of log houses, facilitates the handling of such jobs in the architect's office and protects his reputation and responsibility for the dependability of the completed job.

Full co-operation in the preparation of plans in your office. Interesting and approved structural features which may be readily incorporated in your plans. A folio showing completed jobs is available for your use.

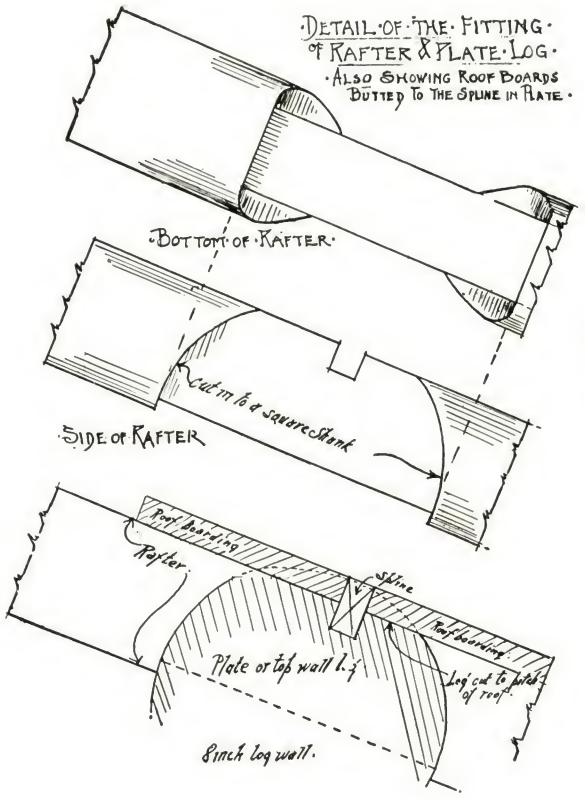
"P & H" REAL LOG HOUSES

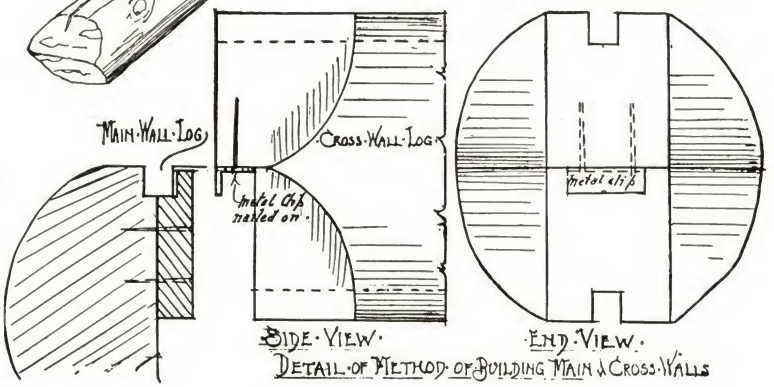
These two sketches illustrate the "P & H" interlocking corner construction—also the groove and spline construction.

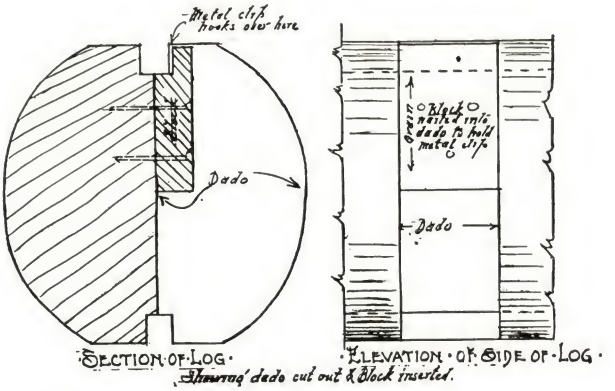


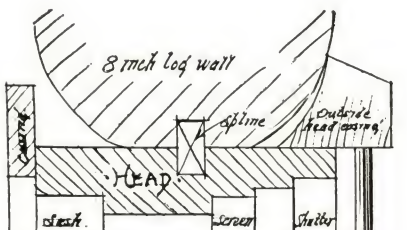


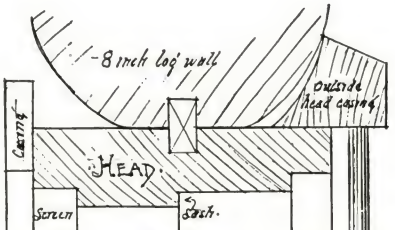
NOTE
All Logs
1/8 In. Scant
i.e.—1/8 in. less than shown in these details

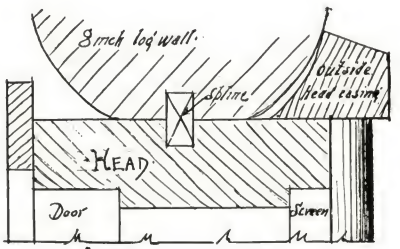


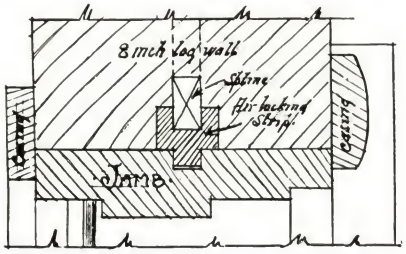


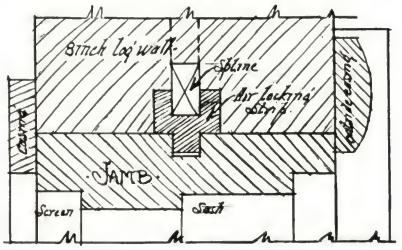


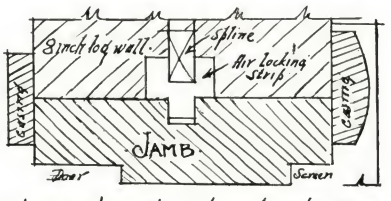


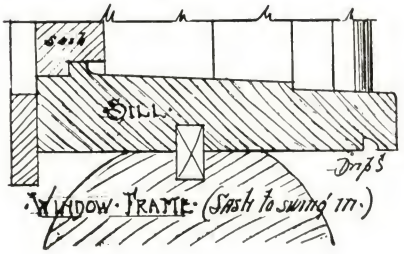


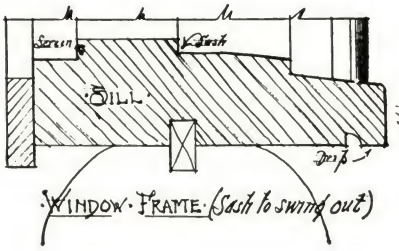


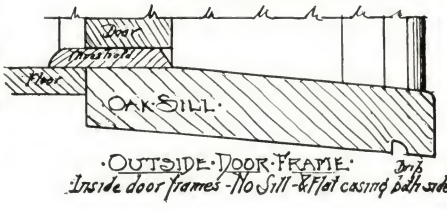












PENROD, JURDEN & CLARK CO.

Manufacturers of American Walnut Lumber and Veneers, and Importers of Foreign Cabinet Woods

GENERAL OFFICES
KANSAS CITY, MO.

MILLS AND PLANT OPERATIONS: KANSAS CITY, MISSOURI, DES MOINES, IOWA, CINCINNATI, OHIO, AND NORFOLK, VIRGINIA

SALES OFFICES
KANSAS CITY, MO., Sheffield Station—American Walnut Lumber and Veneer
CINCINNATI, OHIO, St. Bernard—Fancy Veneer and Lumber, Domestic and Foreign

---

AMERICAN WALNUT LUMBER AND VENEERS

We manufacture and maintain complete and diversified stocks of Walnut lumber and veneers of the highest quality. Logs are carefully selected from the region of the best stands of Walnut timber. Plant facilities are large and modern, plant personnel highly trained, and all manufacturing and marketing operations under the supervision of recognized experts. The Company has grown to recognition as the largest manufacturer of American Walnut as the result of fifty years' experience in that field.

We are in position to satisfy both the normal and the most exacting requirements of the architect for lumber for interior trim, flooring, and other solid woodwork. In American Walnut veneers we carry very large stocks of plain and figured rotary, half-round, sliced and quartered longwood, stumpwood, burls and crotches —all in a great variety of beautiful figure effects and in various colors and shades, and all carefully manufactured from the very choicest material.

In our products of American Walnut, as in our imported Walnuts and foreign fancy woods, you will find a wealth of woods whose unusual grain and markings stimulate new and handsome effects in creative design. Many of the country's finest cabinet work installations have drawn upon this source. So too have numberless small installations—a field which we are eager to serve, and to which we at all times give the most careful attention.

Stands for Quality and Service

Left:

Office of the President
The Maytag Company
John R. Fugard, Architect
Schick-Johnson Company, Woodwork
Algoma Plywood and Veneer Co., Panels

Right:

Section of the Paneled Wall of an Executive Office
Figured Walnut, cathedral match

Equipped to supply every need of the architect

Checking Incoming Logs from the Orient

SPECIAL PLANT AND SALESROOM SERVICES FOR ARCHITECTS

You are cordially invited to visit our showrooms, where personal service is available to the architect. In Cincinnati we are especially equipped to show samples and matched and finished panels to the architect interested in either native or foreign fancy woods. In or readily accessible to the leading cities of the country our Sales Offices offer opportunities to see and select from the finest foreign and domestic cabinet woods.

CHOICE FOREIGN WOODS

In foreign woods, activities of the PENROD, JURDEN & CLARK CO. span the globe. No field is left unexplored, no expense or trouble spared, in the effort to secure fine trees notable for size, and for beauty, distinction, and rarity of figure.

Working through our own representatives in Europe, Australia and the Far East, rarely through middlemen, we buy choice trees where they grow, after personal examination. Logs move directly from the virgin forest to our tide-water plant at Norfolk, Virginia, with freight and handling charges reduced to the minimum.

Stocks of veneers of choice foreign woods are fresh and complete.

A GUIDE TO OUR HUGE STOCKS OF FOREIGN WOODS

Very Light

Ash . . Aspen . . Avodire . . Ayous . . Bella Rosa . . Finnish Birch . . Harewood . . Maple . . Prima Vera. Holly.

Light

Allacede . . Framire . . Greywood . . Kambala . . Lovea . . Movingui . . Narra . . American and Russian Oak . . Pearwood . . Burma Padauk . . East Indian Satinwood . . Sycamore . . Tamo . . Zebrano. Almon.

Brown

Macassar Ebony . . Goncalo Alves . . Imbuya . . Koa . . Indian Laurel . . Laurack . . English Brown Oak . . Orientalwood . . Paldao . . Teak . . Circassian, English, French and Italian Walnut . . Black Bean, Imbuya, Tabasara, Kelobra.

Black

Gaboon and Kribi Ebony.

Pinkish-Red

Bosse . . Bubinga . . Cherry . . African and Cuban Mahogany . . Australian Silky Oak . . African and Andaman Padauk . . Brazilian, East Indian and Madagascar Rosewood . . Sapeli . . Tulipwood.

Burls

Ash . . French Elm . . Maidhu . . Maple . . Madrone . . Olive . . Myrtle . . Poplar . . Redwood . . Thuya . . Circassian and French Walnut.

Crotches

Avodire . . Mahogany . . Brazilian Rosewood . . Circassian and French Walnut.

Stumpwood

Ash . . Maple . . French, Circassian and Turkish Walnut.

Swirls

Ash . . Mahogany . . Oak.

Maidhu Burl Supplied for One of New York's Fashionable Stores
Designed by NYHOLM AND LINCOLN

SOUTHERN HARDWOOD PRODUCERS, INC.

805 Sterick Building
MEMPHIS, TENN.

SOUTHERN HARDWOODS FOR INTERIOR AND EXTERIOR TRIM, PANELING, CABINETS, STAIRS, DOORS AND FLOORS

Purpose

A trade organization conducted by representative manufacturers of Southern hardwoods to furnish architects, builders, and industrial users of hardwood with technical information, and to carry on research in the uses and properties of Southern hardwoods.

Dining Alcove—quartered ribbon striped Black Gum panels and doors, Ash trim, Tupelo plywood ceiling, Southern Red Oak floor, Magnolia Venetian blinds

Southern Hardwood Species

Ash	Gum (black)	Oak (red)
Basswood	Gum (red and sap)	Poplar (yellow)
Beech	Hackberry	Pecan
Cottonwood	Hickory	Persimmon
Cypress (yellow) softwood	Magnolia	Sycamore
Elm (soft)	Maple (soft)	Tupelo
	Oak (white)	Willow

Ample quantities of these woods are available through dealers and the supply is backed by the largest hardwood area in the world. The South has 80 million acres of hardwood forest lands which are growing an inexhaustible supply of hardwoods for present and future use. More than 50 per cent of the hardwoods used are Southern hardwoods. SOUTHERN HARDWOOD PRODUCERS, INC., will gladly assist buyers in locating a nearby distributor of any Southern hardwood. The South, with a reserve of 20 billion feet of red and sap gum, is the sole source of this hardwood as well as the only source of black gum, pecan, tupelo, and willow. The South produces more than 50 per cent of the white and red oak and has a standing growing reserve of more than 40 billion feet of these woods. It also has large quantities of beech, soft elm, hickory, magnolia, soft maple, yellow poplar, and sycamore.

Grades, Sizes and Seasoning

Southern hardwood and all other American hardwood lumber is measured and graded by the Standard Rules of the National Hardwood Lumber Association on the basis of cuttings in a board. A unit of cutting is 12 square inches, or a piece 1 inch wide by 12 inches long. Usually hardwood lumber is worked up into articles of furniture, interior trim, etc., which take relatively short pieces of wood. This practice of grading on cuttings is, therefore, a logical one, enabling the purchaser to buy the particular grade of lumber at a price which will yield him the greatest area of clear wood for a given sum. It is neither wise nor economical to specify the highest grades of hardwoods for every use. To obtain the grade of hardwood needed for a given job one should make use of the knowledge of the manufacturer or dealer and permit him to help select the most suitable grade of wood to be used.

Standard Grades—Standard grades of hardwood lumber consist of: Firsts, Seconds, Selects, No. 1 Common, No. 2 Common, Sound Wormy, No. 3-A Common, No. 3-B Common. In the hardwood industry it is customary to group Firsts and Seconds in one grade; another practice is to combine No. 1 Common and Selects.

Seasoning—Modern methods of air drying and kiln drying are employed by the members of SOUTHERN HARDWOOD PRODUCERS, INC., and lumber produced by these mills comes to the user seasoned and ready for fabrication.

Living Room—Southern Red Oak wall paneling and floors, Tupelo plywood ceiling

Specifications Writing for Southern Hardwoods

A proper looking completed installation of trim, paneling, and interior or exterior woodwork should be the aim of all specifications. In Southern hardwoods, species and the kind of sawing are more important in obtaining the desired results than the naming of grades. White and red oak, red and sap gum, sycamore, black gum, and tupelo are both plain sawed and quarter sawed, and consequently different characteristics and different grain patterns prevail within each species.

The SOUTHERN HARDWOOD PRODUCERS, INC. has prepared several bulletins on some of the species of Southern hardwoods and will issue informative bulletins on the other species. These bulletins will be sent free to established architectural firms and contractors on request. The bulletins contain information on the nature, characteristics, availability, and uses of the several Southern hardwoods.

About Quality in Hardwoods

"Geography, or locality of growth, is commonly held by consumers (and the idea is given encouragement by producers) as having an important effect on quality. Local growth conditions do have a marked effect on quality but geography in itself is a poor index of growth conditions and the Forest Products Laboratory, in its years of testing and research, is inclined to minimize the importance or reliability of adhering strongly to state or regional distinctions."

For example, oak from any section of the country can be had, either fine grained or with a larger grain pattern, plain or quarter sawed. Individual trees vary in their growth rates, and the ultimate patterns found in lumber are determined by the tree from which the boards came. For some purposes wood of rapid growth is more desirable than wood of slow growth. The reverse is also true. Specify to get the character wanted in the wood for the purpose for which it is to be used.

Veneers and Plywood

Veneers in red gum are used in the form of plywood or on solid corewood, and are obtainable in sliced or sawed veneers, as figured red gum, ribbon stripe, or plain; in rotary cut, as plain or unselected red gum. White and red oak veneers and plywood are manufactured in plain, quartered, and rotary cut. Magnolia, sap gum, black gum, tupelo, yellow poplar, and cottonwood veneers are used extensively for painted or enameled work. These diffuse porous hardwoods, with little or no figure, present a smooth, hard surface capable of taking and holding enamel. Quartered sycamore makes an attractive panel in veneers. Blond effects in moderne trim and furniture are easily obtained in magnolia, tupelo, soft maple, beech, sap gum, and black gum.

Mouldings, Lineal and Package Trim

Southern hardwoods are made up at the mills in mouldings, lineal and package trim. For information as to dealers or sources of supply, write to SOUTHERN HARDWOOD PRODUCERS, INC.

Southern Hardwood Flooring

More than 60 per cent of the oak flooring is made from Southern oak. Southern oak flooring is standarized under the U. S. Department of Commerce, Commercial Standards CS 56-36, and by the National Oak Flooring Manufacturers Association. Red gum and tupelo flooring and decking are for hard, tough wear, such as factory floors, docks, etc. Southern beech flooring is used in homes, schools, gymnasiums, etc.

SOUTHERN HARDWOOD USE CHART FOR ARCHITECTS AND BUILDERS

Species	Color of Heartwood	Plain Sawed Lumber	Quarter Sawed Lumber	Architectural and Other Uses	Finishes
Ash	Grayish brown, sometimes with reddish tinge	Conspicuous growth ring, occasional burl	Distinct, not conspicuous growth ring stripe, occasional burl	Interior finish, furniture, automobile bodies, tool handles, refrigerators, etc.	Natural or stained
Basswood	Creamy white to creamy brown, sometimes reddish	Faint growth ring	None	Interior finish, paneling, furniture, Venetian blinds	Paint or enamel
Beech	White with reddish tinge to reddish brown	Faint growth ring	Numerous small flakes up to ⅛" in height	Interior finish, flooring, furniture, handles, woodenware, food containers	Natural or stained
Cottonwood	Grayish white to light grayish brown	Faint growth ring	None	Paneling in the form of plywood	Paint or enamel
Cypress (Yellow) Softwood	Light yellowish brown to reddish brown	Conspicuous, irregular growth rings	Distinct, not conspicuous growth ring stripe	Interior and exterior finish, beams, siding, general utility wood	Paint or natural
Elm (Soft)	Light grayish brown, usually with reddish tinge	Distinct growth ring with fine wavy pattern within each ring	Distinct growth ring stripe	Furniture, interior finish	Natural or stained
Gum (Red)	Reddish brown	Faint growth rings, occasional irregular darker streaks in figured gum	Distinct, not pronounced ribbon, occasional irregular darker streaks in figured gum	Interior finish, paneling in figured, striped or rotary cut veneers, flooring, beams, furniture, corewood	Natural or stained, sometimes enameled
Gum (Sap)	(No heartwood) Sapwood light brownish gray	Faint growth ring, occasional irregular darker streaks	Faint growth ring, occasional irregular darker streaks	Interior finish, paneling in the form of veneers, furniture, built-in cabinets, kitchen cabinets, corewood	Paint or enamel, sometimes stained or natural
Hackberry	Light yellowish or greenish gray	Conspicuous growth ring	Distinct, not conspicuous growth ring stripe	Interior finish, furniture, refrigerators and kitchen cabinets	Natural, stained or painted
Hickory	Reddish brown	Distinct, not conspicuous growth ring	Faint growth ring stripe	Interior finish (antique effect with "bird pecked" hickory)	Natural or stained
Magnolia	Light to dark yellowish brown with greenish or purplish tinge	Faint growth ring	Growth ring stripe not conspicuous	Interior finish, paneling, Venetian blinds, built-in cabinets, furniture and kitchen cabinets	Paint or enamel, natural or bleached
Maple (Soft)	Light reddish brown	Faint growth ring, occasionally bird'seye, curly and wavy	Occasionally curly and wavy	Interior finish, flooring, furniture, refrigerators	Natural or stained
Oak (White)	Grayish brown, rarely with fleshy tinge	Conspicuous growth ring	Pronounced flake, distinct not conspicuous growth ring stripe	Interior and exterior finish, paneling of moulded boards, or with stiles and rails, flooring, furniture	Natural or stained
Oak (Red)	Grayish brown, usually with fleshy tinge	Conspicuous growth ring	Pronounced flake, distinct not conspicuous growth ring stripe	Interior and exterior finish, timbers, paneling of moulded boards, or with stiles and rails solid or veneered, flooring, furniture	Natural or stained
Poplar (Yellow)	Light to dark yellowish brown with greenish or purplish tinge	Faint growth ring	None	Interior finish, paneling, built-in cabinets, kitchen cabinets, corewood in furniture	Paint or enamel
Pecan	Reddish brown with occasional darker streaks	Distinct, not conspicuous growth ring, occasional burl or wave	Distinct, not conspicuous growth ring stripe, occasional burl or wave	Interior finish, furniture (especially adaptable for school furniture)	Natural or stained
Sycamore	Flesh brown	Faint growth ring	Numerous pronounced flakes up to ¼" height	Interior finish, quartered, in paneling either solid or veneered, furniture	Natural or stained
Tupelo and Black Gum	Pale to moderately dark brownish gray	Faint growth ring	Distinct, not pronounced ribbon	Interior finish, factory flooring, decking, built-in cabinet work, kitchen cabinets, furniture	Paint, enamel, stained or natural
Willow	Pale reddish brown	Faint growth ring	None	Interior finish, built-in cabinets, furniture	Stained

For detailed information about any Southern hardwood write to Southern Hardwood Producers, Inc.
805 Sterick Building, Memphis, Tenn.

TRIMPAK CORPORATION

Manufacturers of Packaged Interior Wood Trim

44 Whitehall Street
NEW YORK, N. Y.

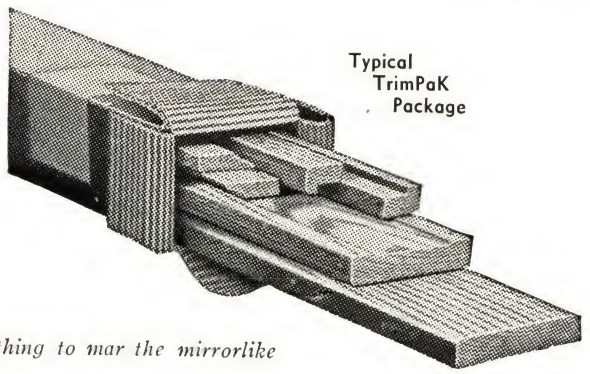
What Is TrimPaK?

TrimPaK is interior trim which has been smoothly machine sanded, cut to approximate length and then packed in cartons made of jute board which keep the stock clean and fresh until it is desired for erection on the job.

Before TrimPaK was made available, interior trim was sold out of the lumber yard in long pieces which had to be cut on the job to fit the door and window openings. It was inevitable that in the handling of this material it would become soiled and marred. As a general rule, it left the mill bright and clean, but enroute—perhaps a thousand miles or more from the mill—dust and cinders sifted into the railroad car. After it arrived at the lumber yard and was placed in stock, perhaps months would elapse before it was sent out to the job, and here again opportunity was afforded for the stock to become soiled. Then, after it was delivered to the job, it might be left unused for a number of days, accumulating more grime and finger prints. In this situation, we have TrimPaK's *Basic Idea* No. One.

TrimPaK is the answer—no matter how long it has been away from the mill where it was manufactured, it comes to the job clean and bright, ready for use and in condition to contribute measurably to a beautiful home.

The care used in packing TrimPaK is exemplified in this statement: *The men who pack it at the mill use red flannel cloths to wipe off every speck of sawdust or dirt so that there will be nothing to mar the mirrorlike smoothness of the sanded surfaces.*



Typical TrimPaK Package

TrimPaK Eliminates Waste

As compared with ordinary construction lumber, good trim is too costly to waste. Broken pieces, warped and crooked pieces, tag ends too short to use, etc. all run up the cost of trim without contributing value.

TrimPaK takes care of this problem of waste. (*Basic Idea* No. 2.) Every piece is cut to approximate length with just enough extra length to permit the carpenter to make a good joint. In most instances, only one cut on each piece is required, the other end having been cut square on the high speed precision machinery at the TrimPaK mills.

When you buy TrimPaK, you get *just enough trim to do the job—no more and no less.*

If there are twenty openings to trim, the dealer delivers forty packages of TrimPaK, because it takes two packages for each window and door. The horizontal pieces are in one package; the vertical pieces in another. Each package is clearly labeled so that the carpenter knows before he opens the package what size opening it is made for. *Basic Idea* No. 3 is saving of labor cost.

There is Inherent Quality in TrimPaK

Only the *cream of the log* goes into TrimPaK. (*Basic Idea* No. 4). In TrimPaK, you get clear lumber—and when we use this term we are fully aware that Webster defines "clear" as "free from all that dims, blurs, or obscures; free from all defects; clean."

TrimPaK is Scientifically Seasoned

When TrimPaK is selected you are assured of getting trim seasoned the scientific way—in modern, automatically controlled steam dry-kilns. This method produces lumber which is seasoned thoroughly and uniformly. (*Basic Idea* No. 5). All the shrinkage has occurred before the lumber is manufactured into the finished product—and then the tight cartons in which TrimPaK is packed prevent the absorption of moisture from the air in the time which may intervene between manufacture and delivery on the job.

TrimPaK Takes a Beautiful Finish

Because it is manufactured properly and thoroughly seasoned, TrimPaK takes and retains paint and varnish perfectly. It provides a perfect base for the art of the decorator. In each species of woods in which it is manufactured, TrimPaK is the *cream of the log—"the Ultimate in Trim."*

TRIMPAK OFFERS A WIDE CHOICE OF WOODS

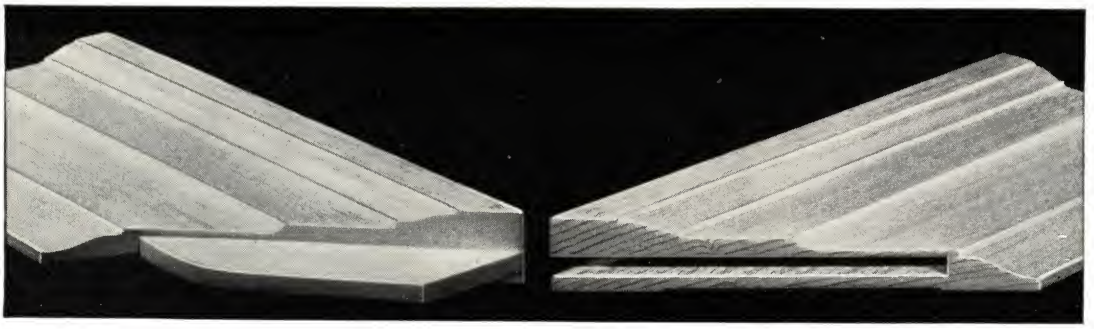
In hardwoods, it may be secured in:

Birch
Red Gum
Black Gum
Sap Gum
Red Oak
White Oak
Chestnut
Maple.
Basswood
Mahogany
Soft Yellow Poplar

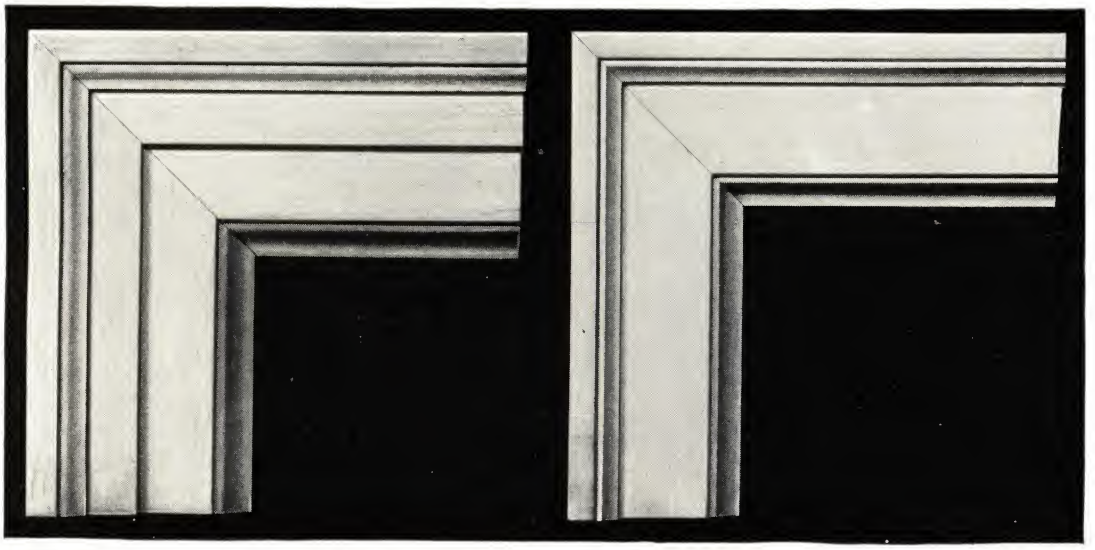
In softwoods:

Arkansas Soft Pine
Idaho White Pine
Ponderosa Pine
Genuine Red Cypress
Old Growth Douglas Fir

TRIMPAK NARROW LINE TRIM



Narrow Line Trim
Full mitred corners accurately cut with patented solid wood spline on vertical casings, with groove to receive splines in head casing. Easily put together.



Model "A" **Two Popular Styles of TrimPaK Narrow Line Window Trim** Model "B"

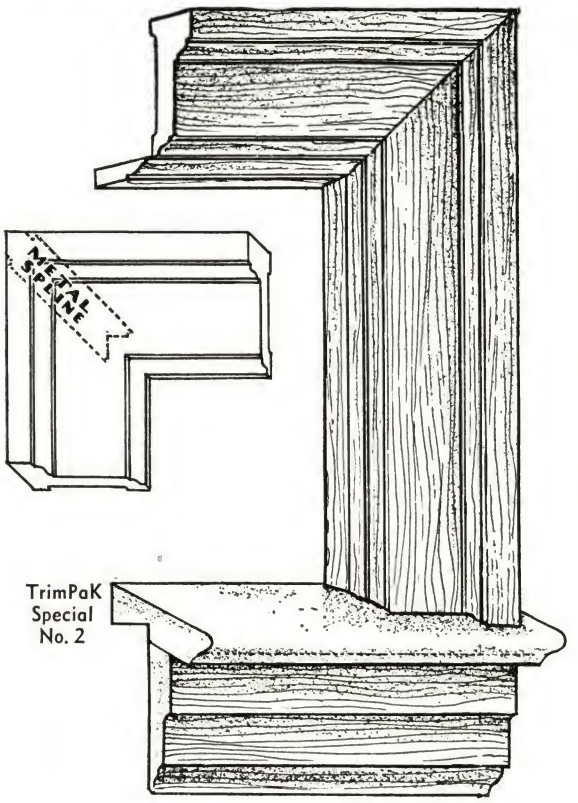
The illustrations on this page will give the architect and contractor a clear idea of the fine lines and carefully studied mouldings of TrimPaK. Simplicity is the keynote in every TrimPaK style. Intricate patterns are difficult to keep clean and are out of harmony with prevailing styles of architecture. There is sufficient variety in the standard designs of TrimPaK to permit individuality.

Attention is called to the patented solid wood spline on the vertical casings shown at the top of this page. In the head casing is a carefully cut groove to receive the spline. This makes for easy assembly and non-warping construction.

TRIMPAK SPECIAL No. 2

The Special No. 2 window trim shown on the right is one of the most popular TrimPaK products. The mitres are accurately cut and kerfed to receive the metal locking spline described below. Stools and aprons have ends returned.

Positive Locked Joints—Special attention is called to the metal spline shown in the line drawing. This spline assures an absolutely tight joint at the mitred corners and is a typical TrimPaK development. A mitre clamp and spline driver are supplied to the contractor to assure accuracy in erection and a perfect joint with a minimum of labor.



WESTERN PINE ASSOCIATION

Soft Textured Pine Lumber, Lath and Woodwork

Yeon Building, PORTLAND, OREGON

MEMBERS' SALES OFFICES, JOBBERS AND DEALERS IN PRINCIPAL CITIES

Products

PONDEROSA PINE LUMBER.
IDAHO (Genuine) WHITE PINE.
SUGAR (Genuine White) PINE.

For exterior and interior finish, mouldings, siding, house framing, boards, window frames, sash, doors, porch columns, paneling, stair and cabinet work.

Also Larch, Douglas Fir, White Fir, Red Cedar, Incense Cedar and Engelmann Spruce.

Sold Throughout the United States

Western soft textured Pines are available in all sections of the United States in the form of yard lumber and fabricated building products. They can be procured from retail lumber yards, planing mills, jobbers and sash and door manufacturers.

Supply

Adequate lumber is on hand at all times at distributing points and mill storage yards to take care of building needs in Western Pines. Bureau of Census figures show actual annual production of Ponderosa Pine has totaled about 3,000,000,000 feet, Idaho White Pine 525,000,000 feet and Sugar Pine 300,000,000 feet. Each wood is backed by large reserves of old growth timber which, with the new growth that is added each year, insure a continuing production of lumber; in fact, no other woods of commercial importance promise as permanent a natural supply.

Association Membership and Services

One hundred fifty Pine manufacturers, located in Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, South Dakota, Washington and British Columbia, having common manufacturing problems and timber species, have associated themselves together to promote efficiency in manufacturing, uniform grading and the dissemination of information which will assist architects, builders, fabricators, dealers and consumers in all matters relating to the proper use of the woods listed above.

Lumber sales are handled by the individual member mills and their agents throughout the nation. However, the WESTERN PINE ASSOCIATION will gladly assist buyers in locating a nearby distributor of these woods.

These lovely paneled walls of Idaho White Pine provide a perfect setting for the fine foods served by Schrafft's in their restaurant in the Chrysler Building, New York City. Charles Berge, Architect for Schrafft's

Grades, Sizes and Seasoning

The lumber produced by these Association mills is uniformly graded in accordance with published rules of the WESTERN PINE ASSOCIATION and is furnished in sizes which are in close conformity to American Lumber Standards. The mills employe expert graders of certified ability. Their work is checked currently by experienced lumber inspectors of the Association, thus assuring to purchasers of these woods, lumber of uniform manufacture and quality. The Pine species are segregated into three grades of finish and five grades of boards, permitting a wide choice of material, each grade of which is restricted to relatively narrow limits of quality variation. The stock is carefully seasoned in the air or in dry kilns, is surfaced to uniform sizes *after* seasoning, and from the moment it is shipped from the mills is fitted for use in building.

Trade and Grademarked Lumber

Specifiers of lumber can protect their clients against substitution by including in the specifications the requirement that all stock which is purchased shall be marked with (1) the symbol of the Association under whose rules it is graded, (2) the manufacturer's mark, (3) the Association grade name and (4) the species name. These elements are included in the typical mark used by Western Pine Association mills, when stock is so ordered. See illustration above.

Specification Writing

Care should be taken in writing specifications for lumber to have them conform to the grade names and species names used by manufacturers of these products. When special stock is required, the quality and kind that is wanted should be clearly described. If special patterns are called for, detailed drawings should be furnished the shipper. The WESTERN PINE ASSOCIATION will send to established architectural firms and contractors, upon request and without charge, booklets about its species. In these publications, information is given about the properties, uses and grades of each wood, including photographs of the standard grades. When writing, please state the species on which the information is wanted.

Ponderosa Pine—(Pinus ponderosa)

Physical Properties and Appearance—The physical properties of Ponderosa Pine and the uses to which it is commonly put align it with the White Pines. It is produced in commercial quantities in most states west of the Rocky Mountains. The wood is distinguished by its light color, soft, even texture and good working qualities. The grain of the wood is only slightly discernible, the wood nails easily without splitting, takes and holds paint well, is light in weight, and has all of the qualities required of a wood suitable for high quality finishing uses.

Uses and Characteristics — A comparatively large proportion of the log is cut to factory lumber. For more than thirty years, Ponderosa Pine has been the leading wood for sash, doors and frames, and through all these years it has served these uses satisfactorily. It is, therefore, not a new or untried material, neither is it one that has been found lacking in the essential requirements of the service.

Another important use of Ponderosa Pine is for mouldings. Its soft texture, slight shrinkage and good nailing properties permit the wood, even in very small sizes, to be worked to intricate patterns with sharp, clean cut edges and contours. It is very satisfactory for all painted and enameled work, and the wood's light color is of special advantage when light tints are to be applied.

Ponderosa Pine is one of few woods used for knotty paneling. Its satiny sheen, inconspicuous grain and sound, tight, red knots, which surface smoothly, account for its increasing use for paneling. Besides, the wood stains well and its light color blends effectively with the tan and brown tints so frequently selected for this type of work.

The several board grades of Ponderosa Pine are put to many uses, important among which are shelving, drop siding, flooring, partition, concrete forms, and sheathing. Boxes and crates are an important industrial use.

Ponderosa Pine has a low density cell structure, making the wood an excellent insulating material against heat and cold. The wood is resilient and shows little tendency to warp or shrink under varied climatic conditions.

It is economical to use this wood. For example, hinges and locks can be fitted and attached to Ponderosa Pine doors quickly, thereby lessening labor costs. The doors stay put, wear well, and are easy to operate due to their light weight. Ponderosa sash can be fitted and weatherstripped at low cost. All Ponderosa Pine woodwork is a time-saver for the carpenter because of its easy cutting, shape holding and good nailing qualities. The wood readily fulfills the requirements of most building needs.

Glassy-smooth enameled trim and china case of Sugar Pine in residence of Mr. and Mrs. Richard Wallace, Bel-Air, Los Angeles, Calif. J. E. Dolena, Architect and Tifal, Ltd., Contractors

Idaho (Genuine) White Pine—(Pinus monticola)

Physical Properties and Appearance—The fact that Idaho White Pine is a genuine White Pine means much to the architect or builder who is familiar with the many fine qualities of White Pine, which wood, for centuries, has been considered the choicest among all softwoods used in building construction.

There are three genuine White Pines of commercial importance in the United States—Northern White Pine (Pinus strobus), Sugar Pine (Pinus lambertiana), and Idaho White Pine (Pinus monticola). So nearly alike are the physical properties of these three woods that expert wood technologists state "there is absolutely no positive means of identifying the three White Pines one from another microscopically."

Idaho White Pine is produced mostly in Idaho, Washington and Montana. It is noted for its very soft, uniform texture, and slight grain. The difference in cell wall thickness between the relatively thinner celled springwood and the thicker summerwood is so slight as to be imperceptible. The wood is light colored, free from pitch and oils which discolor paint, shrinks little, nails easily without splitting, is straight grained, light to handle, and easily worked.

Uses and Characteristics—Idaho White Pine trees are smaller on the average than Sugar Pine and yield a high percentage of small, sound, tight knotted boards the equal of which is seldom found in any wood. The lumber is excellent for insulating purposes because of its strength, good nailing properties and very low density cell structure. White Pine has a good record of resistance to weathering and decay. The number of early New England dwellings that are still in use is proof positive of the wood's value for work exposed to the weather. For cornice and porch work, siding, windows, doors, frames and trim, Idaho White Pine serves every need. On the interior, it is used for the very finest stair work, mantels, cabinet work and enameled finish. When selected for Knotty Pine interior finish, it is without a peer. In fact, Idaho White Pine is a credit to the architect and the builder, wherever it is used.

Sugar Pine (Genuine White Pine) —(Pinus lambertiana)

Physical Properties and Appearance—Sugar Pine, the largest of all the pines, is a true White Pine that is native to California and southern Oregon. Its tall cylindrical trunk, free of branches for some distance from the ground, yields a high percentage of clear lumber. It is not uncommon in this wood for finish and factory lumber to be cut in wide, thick pieces measuring up to as much as 16/4 inches in thickness, many entirely clear in quality. The average Sugar Pine log also produces a large proportion of factory lumber, suitable for manufacturing into window frames, doors, sash, screens and similar fabricated products.

Uses and Characteristics—Sugar Pine is prized for its soft, easy cutting texture, its straight grain, and its shape holding qualities. It is an important species for foundry patterns, one of the most exacting of all uses for wood. Capital decorations, ornamented mouldings, wood carvings, and wood turnings of all sorts are easily and accurately reproduced in this wood. Furthermore, Sugar Pine shows no tendency to split in nailing and is quickly installed by the carpenter. It resists weathering and decay, and has proven beyond question, through years of service under varying climatic conditions, its superior qualities for all exterior work, as for siding, porch and cornice work, mouldings, columns, balusters, porch floors and ceiling. Sugar Pine absorbs paint evenly and holds it without the paint film peeling or becoming wavy from raised grain. The good painting qualities of the wood are attributed largely to its soft texture, light color, slight shrinkage and freedom from resinous substances and oils which discolor paint or cause it to peel. For the same reasons, Sugar Pine is an excellent wood for the very best interior enameled work. On even the most difficult design or assembly jobs, the wood can be used with confidence that it will measure up to the requirements of the use.

Literature and Installations

The WESTERN PINE ASSOCIATION, Yeon Building, Portland, Oregon, will assist architects and builders on any problems concerning the use of its products, and will supply samples and literature on request. Also, it will furnish a list of installations where Ponderosa Pine, Idaho White Pine and Sugar Pine products have been successfully used.

Ponderosa Pine used throughout residence of Mr. and Mrs. R. H. Weidman, Missoula, Mont. (C. J. Forbis, Architect)

TIMBER ENGINEERING COMPANY

Manufacturer and Distributor of Teco Timber Joint Connectors
Newest Improvement in the Structural Field

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Design Service

Timber Engineering Company, a subsidiary of the National Lumber Manufacturers Association, offers *free, typical designs* illustrating recommended timber design practice with Teco timber connectors to insure greater strength, rigidity and economy of timber built structures. Every architect should have this up-to-date information. Teco timber connector structures are the latest important development in the building field.

Split Ring Timber Trusses—Detroit Terminal R.R. Auto Loading Dock 50x600 Ft.

Technical Service

Timber Engineering Company, the lumber industry's central agency for timber design information, and the National Lumber Manufacturers Association, offer the following technical literature:

(1) Technical Manual of Timber Connector Construction (free), (2) Modern Timber Structures (free), (3) Modern Timber Roof Trusses (free), (4) Typical Timber Joints (free), (5) Wood Structural Design Data ($1.00), (6) Working Stresses for Structural Lumber and Timber (free), (7) Bolted Wood Joints—Safe Loads (free), (8) Maximum Spans for Joists and Rafters (free), (9) Wood Columns—Safe Loads (free), (10) Lumber Grade Use Guide ($1.50), (11) House Framing Details (10¢), (12) Stronger Frame Walls (10¢), (13) Wood Hand Book by Forest Products Laboratory (25¢).

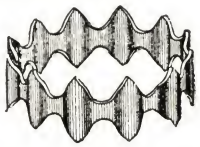
Types of Structures

Timber framing built with Teco Joint Connectors affords maximum economy for garages, warehouses, auditoriums, gymnasiums, hangars, barns, schoolhouses, grandstands, lookout towers, radio towers, tank towers, bridges and other frame structures.

Teco Products

(1) Toothed Rings for wood-to-wood connections.
(2) Split Rings for wood-to-wood connections.
(3) Flat Spike Grids for flat sawn face wood connections.
(4) Single Spike Curve Grids for pile and sawn brace connections.
(5) Double Curve Spike Grids for pole or pile connections.
(6) Clamping Plates for tie, guard rail, trestle cap connections.
(7) Toothed Shear Plates for wood-to-wood or wood-to-steel connections.
(8) Plain Flanged Shear Plates for wood-to-wood or wood-to-steel connections.
(9) Split Ring Grooving Tools. Shear Plate Grooving Tools.
(10) High Strength Rods and Ball Bearing Washers for embedding toothed rings, grids and clamping plates.

Samples of connectors sent free upon request with descriptive literature.



Toothed rings of 16-gage sheet steel in sizes of 2, 2⅝, 3⅜ and 4 in. are for wood-to-wood connections in thin members or where loads are light.

Split rings of mild steel in sizes of 2½, 4, 6 and 8 in. are for wood-to-wood connections for medium and heavy loads in permanent or demountable structures.

Shear plates of malleable cast iron are for wood-to-wood connections or wood-to-steel in permanent or demountable structures. See above Teco products Nos. 7 and 8.

Spike grids of malleable cast iron, three types in sizes 4⅛x4⅛ in., are for bracing timber bents and trestles, and for piers, wharves, bulkheads and cribwork.

WHY A TECO TIMBER CONNECTOR IS SUPERIOR TO A BOLT

Timber Connectors are indispensable for developing the full safe working loads of timber members. They provide much greater resistance to shear than can be had with bolts in the same area.

To illustrate this, consider a simple tension splice for a 4x6-in. timber, using various methods of design. The timber S4S has a net section of 20.39-in., and assuming a grade of lumber qualifying for a tension stress of 1600 lbs. per sq. in. it will carry a safe tension load of 32,624 lbs.

(1) If this joint is assembled with the maximum number of ½-in. bolts allowed, which in this case is 12 each side of the joint, the total load capacity is 12,600 lbs. This is only 40% of the load capacity of the timber.

(2) Nine ⅝-in. bolts can be used, with a load capacity of 14,760 lbs., or seven ¾-in. bolts, which have a load capacity of 16,300 lbs., or 50% of the strength of the timber.

(3) One-inch bolts have a greater individual capacity than smaller bolts, but they reduce the timber section seriously and only four can be used, with a safe load of 16,720 lbs.

(4) A 2½-in. bolt would have much greater individual load capacity, but much of the timber section would be cut away and the joint would be greatly weakened.

(5) A 2½-in. split ring affords much greater bearing area at the timber surfaces than a 2½-in. bolt, due to the bearing of the connector against the wood both inside and outside the connector. At the same time the timber section is reduced less than half as much as for a 2½-in. bolt.

Thus the split ring affords considerably higher loads than a large bolt and retains all the advantages of the small bolt elsewhere. Similar advantages are likewise presented by the other types of connectors.

The safe working load on the 4x6-in. splice in question using 5 pair of 2½-in. split rings each side of the joint is 33,000 lbs., or the equivalent of 102% of the safe load of the timber itself. Therefore, by using connectors it is possible to develop the full working strength of the timber.

A.I.A. 19-e-5

DOUGLAS FIR PLYWOOD

How and Where to Use It

8
18

DOUGLAS FIR PLYWOOD ASSOCIATION

Tacoma Building, Tacoma, Washington

The Association

A non-profit organization of United States manufacturers of Douglas fir plywood, founded to sponsor a continuing program of technical research, to promote the use of this material in construction and industry, and to help users employ it to the best advantage.

Inquiries as to the characteristics or uses of Douglas fir plywood will receive prompt attention. Address DOUGLAS FIR PLYWOOD ASSOCIATION, Tacoma Bldg., Tacoma, Wash., or any of the following industry mills:

ABERDEEN PLYWOOD COMPANY
Aberdeen, Washington

AIRCRAFT PLYWOOD CORPORATION
Seattle, Washington

BUFFELEN LUMBER & MFG. CO.
Tacoma, Washington

CAPITOL PLYWOOD CO.
Olympia, Washington

ELLIOTT BAY MILL COMPANY
Seattle, Washington

HARBOR PLYWOOD CORPORATION
Hoquiam, Washington

M & M PLYWOOD CORPORATION
Portland, Oregon

NORTHWEST DOOR CO.
Tacoma, Washington

OLYMPIA VENEER COMPANY, INC.
Olympia, Washington

OREGON-WASHINGTON PLYWOOD CO.
Tacoma, Washington

PETERMAN MANUFACTURING CO.
Tacoma, Washington

THE PLYLOCK CORPORATION
Portland, Oregon

ROBINSON MANUFACTURING CO.
Everett, Washington

SMITH WOOD-PRODUCTS, INC.
Portland, Oregon

VANCOUVER PLYWOOD & VENEER CO.
Vancouver, Washington

WASHINGTON VENEER COMPANY
Olympia, Washington

WEST COAST PLYWOOD CO.
Aberdeen, Washington

WHEELER OSGOOD SALES CORPORATION
Tacoma, Washington

★ THE PRODUCT

Douglas fir plywood consists of an odd number of thin sheets, or veneers, of selected old-growth Douglas fir—3, 5, or 7 in standard thicknesses—these being laminated with alternating grain direction. The major processes of manufacture are illustrated on this page.

The water-resistant glue used, after setting under hydraulic pressure, forms a bond of high shear strength, far stronger, in fact, than the wood fibers themselves.

In the manufacture of Douglas fir plywood only the choicest Douglas fir logs are used. These are the so-called "peeler" logs, which are less than 10% of the total production of Douglas fir logs. Douglas fir grows on the Pacific slope, where climatic conditions produce a wood combining soft texture and light weight with extraordinary strength. Because of these characteristics, Douglas fir is widely specified for heavy structural timbers.

★ PHYSICAL CHARACTERISTICS

(Test Data on Pages 8 and 11)

Because the veneers are rotary-cut, not sawn, Douglas fir plywood is available in standard sizes as large as 4x8 feet—and in even larger sizes on special order. Largely because of these sizes, Douglas fir plywood makes possible savings of 40% to 75% over ordinary lumber in handling and labor costs.

Because the grain of each ply composing the material is at right angles to the grain of adjacent plies, the strength of a Douglas fir plywood panel is approximately equal in both directions. By contrast, the tensile strength of ordinary lumber may be twenty times as high parallel to the grain as across it, and the modulus of elasticity from fifteen to twenty times as high. Therefore, a panel of Douglas fir plywood will do the work of solid lumber very much thicker and heavier.

On account of its crossed lamination, Douglas fir plywood has no plane of cleavage. Hence it cannot be split except by extraordinary force. It is practically impossible to split even a small piece with a hatchet or axe. Nails and screws can be driven almost at the very edges.

As each veneer, or ply, is scientifically dried before the gluing process, and as any tendency of an individual ply to shrink or expand is prevented by the opposing grain of adjacent plies, Douglas fir plywood is extraordinarily warp-resistant. Once in place, it is *warp-proof*.

Its light weight is demonstrated by the fact that a cubic foot of 3/8-in. 3-ply of 10% moisture content—for example—weighs only 34 lbs.

Douglas fir plywood comes sanded to satin-smoothness, reducing labor costs at the point of construction.

To summarize, Douglas fir plywood combines in one large unit, strength; rigidity; smoothness; warp-proofness; crack-proofness; thermal and sound insulation value; and ease of speedy construction.

How Douglas Fir Plywood is made:

1 Selected Douglas Fir logs are cut to length and barked.

2 Then turned on a giant lathe and peeled off into endless lengths of thin wood sheets.

3 These sheets of wood are cut to size, laid cross-grain, and glued together flat with water-resistant glue under hydraulic pressure. (Arrows show direction of grain.)

4 The result is giant panels having all the good qualities of natural wood plus size and convenience,—but with advantages of strength, stiffness, and freedom-from-splitting.

★ AVAILABLE THROUGHOUT THE U. S.

Most building material dealers in every section of the country stock Douglas fir plywood in an assortment of sizes and grades. However, if you are unable to obtain it in your community, write to the Association, or to any of the mills listed on page 2.

★ PRICE

Douglas fir plywood is inexpensive. In most thicknesses it costs less per surface foot installed than competing materials. For example, ¼-in. Douglas fir plywood Wallboard retails for 4¢ to 7¢ a sq. ft., depending on quantity and the dealer's freight cost.

★ REPRESENTATIVE USES

Space permits mention of only a few of the hundreds of uses for which Douglas fir plywood's unique characteristics have won it acceptance.

Automobile Body Parts
Auto Trailers
Benches
Boxes, Crates and Chests
Breakfast Nooks
Bulletin Boards
Cabinet Work
Cafe Booths
Clothes Chutes
Closets
Cold Rooms
Concrete Forms
Convention Booths
Crack-proof Walls and Ceilings
Dark Rooms
Dust-proof Coal Bins
Dust-proof Drawers and Drawer Bottoms
Flooring
Freight Car Lining
Garages and Lining
Ironing Boards
Linoleum Base
Lockers
Modern Furniture
Office and Other Partitions
Porch Sun Rooms
Portable Houses
Radio Cabinets
Removable Dance and Gym Floors
Screens
Sheathing
Shelving
Store Fixtures
Subflooring
Table-tennis Tables
Wainscoting
Window Displays
Window Seats

★ CRACK-PROOF WALLS AND CEILINGS

Used for walls and ceilings, Douglas fir plywood gives crack-proof strength and a smoothly sanded natural-wood surface that takes any finish—natural-grain, paint, plastics or paper. Being both low in surface-foot cost and repair-free, this versatile material is economical and has all the advantages for dry-built construction.

As an insulating material Douglas fir plywood has all the advantages of natural wood. The big panels reduce to a minimum the lineal footage of joints—and these joints *stay tight*—permanently proof against air infiltration, thus providing also the valuable insulation of dead air space.

Douglas fir plywood in the Wallboard grade, ¼-in. thick, is the most widely used item for walls and ceilings. For especially substantial construction, ½-in. or even thicker is sometimes used.

As Douglas fir plywood is strong and rigid, it cannot bulge, sag or crumble.

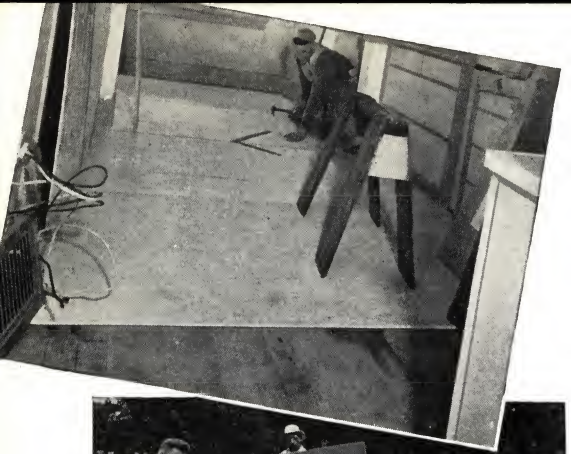
★ WAINSCOTING

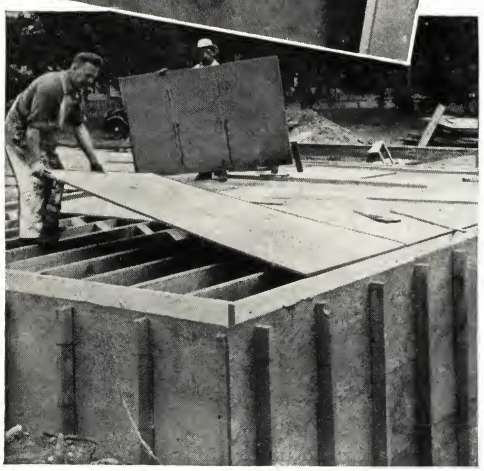
Both because Douglas fir plywood combines low surface-foot cost with labor-saving sizes, and because it lends itself to so many attractive finishes, this material is increasingly preferred for wainscoting.

Above: **(1) Painted Douglas fir plywood walls, ceilings, doors and casework in this living room. (2) Stained Douglas fir plywood walls and woodwork in this library.**

Upper: **Natural Douglas fir plywood walls and casework in this dining room.**

Lower: **Papered Douglas fir plywood walls and painted casework in this kitchen.**





Above: **(1) ¼-in. Douglas fir plywood wallboard over old floors to provide smooth base for linoleum.**

(2) The ⅝-in. Douglas fir plywood panels, having served for concrete forms, are being laid as subflooring.

Upper: **One-man panels of $\frac{5}{16}$-in. Douglas fir plywood sheathing grade provide warm and rigid construction.**

Lower: **Douglas fir plywood sheathing grade for shingle base.**

★ PARTITIONS

Douglas fir plywood's great strength and giant panel sizes make it an ideal material for partitions whether permanent or removable. It is labor-saving and damage-proof. Douglas fir plywood partitions are homogeneous structures extraordinarily resistant to all stresses. An economical partition of plywood—if not less than ½ in. thick—may be constructed with simply a cap and shoe.

★ SUBFLOORING AND FLOORING

For subflooring, or flooring to be covered by carpet or linoleum, and as a finish floor in attics and other areas not subjected to severe service, Douglas fir plywood offers a combination of economies and other advantages not otherwise obtainable.

The huge panels save at least 60% in flooring and subflooring labor by minimizing the work of sawing, fitting, joining, and nailing. The great reduction in lineal footage of joints, and the fact that plywood joints will not open, practically eliminate air leakage. In addition, Douglas fir plywood has all the insulating properties of ordinary lumber.

Used as subflooring, Douglas fir plywood contributes much greater structural strength than ordinary materials. The ⅝-in. thickness is most often used for subflooring. (See chart on page 11.)

Douglas fir plywood floors and subfloors tend to *prevent squeaking* because this material grips nails more tenaciously than ordinary lumber, and because the thicker panels do not yield under the weight of a person walking.

Not being lapped at the edge, every square inch of Douglas fir plywood covers surface. This means a 20% saving over ordinary subflooring in material footage alone and, moreover, the advantage of labor economies.

Douglas fir plywood is an ideal base for linoleum and other resilient floorings. Experienced floormen prefer plywood to any other base on account of its smooth, level, hard surfaces, its minimum of joints; and freedom from cupping. A longer life and a better appearance may be expected from floorings laid on Douglas fir plywood.

Douglas fir plywood is also used for removable dance and gymnasium floors and social and sporting events or similar gatherings. The large lightweight sections can be laid down or taken up quickly.

★ SHEATHING

Structural superiority, insulating and wind-proofing properties, plus demonstrated economy have established Douglas fir plywood as a preferred material for sheathing.

Tests at the U. S. Forest Products Laboratory at Madison showed ¼-in. fir plywood to be 40% more rigid than conventional materials.

Tests at Stanford University, under Professor L. S. Jacobsen, demonstrated that Douglas fir plywood will withstand terrific strain.

Quoting from his report, "For purposes of sheathing closed panels (sections) to resist seismic loads with a minimum distortion of nailed joints, the ¼-in. plywood is decidedly superior to any of the other forms of sheathing.

"In the static tests following the dynamic, panels (sections) sheathed with ¼-in. plywood are decidedly superior to panels sheathed with any of the other forms of sheathing in regard to minimum elastic distortion, maximum load, maximum stiffness recovery, and maximum resilience for a given distortion of 1.5 inches.

"The light weight of the ¼-in. plywood panels constitutes an additional factor of safety if the structure is subjected to dynamic loads of seismic origin."

Tests at the University of Washington, under Professor Bror Grondal, foremost shingle authority, were reported by him, "Douglas fir plywood, as a base for western red cedar shingles, provides the necessary nail-holding qualities, even when $\frac{5}{16}$-in. plywood, the thinnest tested, is used."

Municipal authorities, such as the Building Department of the City of Detroit, Mich., as well as Government Housing experts, have approved $\frac{5}{16}$-in. plywood sheathing.

At the last annual meeting of the Pacific Coast Building Officials Conference (October 1937) $\frac{5}{16}$-in. plywood sheathing—as well as ⅝-in. plywood subflooring and other items—was officially recognized and, in accordance with regulations governing all code changes, given approval for the Uniform Building Code adopted by nearly 200 cities and towns from California to New York and Florida.

This utility material is not only low in first cost, but admits savings of 40% to 60% in labor. The 4 x 8-ft. panels of $\frac{5}{16}$ in. weigh only 30 lbs. and are easily handled and erected by one man. They require fewer and smaller nails than other materials.

The ⅜-in. and ⅝-in. thick plywood sheathing is available where required by service conditions.

★ PRE-FABRICATED CONSTRUCTION

Intensive research and practical experience with a multitude of methods and materials have indicated that pre-fabricated panels or wall units may be the solution to the low-cost housing problem.

Douglas fir plywood is now generally recognized by the leading architects and builders as the most generally suitable material for such panels. It is large in size. It possesses structural strength and rigidity. It is easily bonded permanently to a wood frame, in shop or field, with glue stronger than the wood itself. It is light so that large panels are handled easily by one man. It presents a smooth surface for natural or painted finishes. It is low in cost.

The United States Forest Products Laboratory demonstrated the practicability of this construction three years ago by building a plywood house with pre-fabricated panels using the stressed covering principle. Douglas fir plywood panels were glued to a frame of light lumber studs or ribs for the side-walls, and to joists and rafters for the floor and roof panels. By utilizing this boxed girder principle with sturdy plywood for the top and bottom flanges, substantial reductions in the size of studs, joists, and rafters were effected.

Meanwhile, private housing institutes and governmental agencies have turned to plywood as the material with which to solve the low-cost housing problem.

In all sections of the country, prominent architects and builders have established standard pre-fabricated housing designs with Douglas fir plywood panels and have built numerous structures with marked success.

Conventional exteriors may be employed, but with the advent of resin-bonded material, Douglas fir plywood tastefully painted or finished to suit the most discriminating, offers to architects and builders an economical material for exteriors of low-cost houses.

Large shop-built units of Douglas fir plywood supplement conventional construction or compose entire pre-fabricated systems

A cold storage plant being constructed with exterior panels of resin-bonded Douglas fir plywood—a use demanding permanent moisture resistance inherent in this grade

★ USED AS A CABINET MATERIAL

Warp-proof Doors—Douglas fir plywood has found world-wide use for door panels and for the construction of dust-proof flush doors. In both it combines lightweight strength with extraordinary warp-resistance at modest cost.

Closets, Cupboards and Cabinets—By eliminating piecing and fitting, Douglas fir plywood's large panel sizes greatly reduce the cost of this kind of construction, besides giving it split-proof, warp-resistant strength. Cabinet drawers, bins and doors made of Douglas fir plywood will never stick, and the joints remain permanently tight and dust-proof. Nails and screws can be placed close to the edges without danger of splitting.

Shelving and Bookcases—Warp-proof, split-proof shelving and bookcases can be built with Douglas fir plywood for even less than if ordinary lumber were used. Moreover, plywood shelving can be thinner—more graceful in appearance—without sacrifice of strength.

Breakfast Nooks and Other Built-ins—Damage-proof built-ins, breakfast nooks, ironing boards, window seats, etc., can now be built at considerably lower cost with Douglas fir plywood. This is because it eliminates piecing and glue-up work, and because of the low surface-foot cost of the material.

Store Fixtures—Douglas fir plywood builds extra-strength, repair-free, and efficient store fixtures at a lower cost than any other suitable cabinet lumber. Moreover, doors, drawers, and bins of Douglas fir plywood keep merchandise dust-proof.

Trailer interior walls and casework are of Douglas fir plywood. Cargo trailers, truck bodies, and box-cars are lined with it also

Upper: Mock-up of Boeing Model 247. This full scale model exemplifies the structural rigidity and workability of Douglas fir plywood

Lower: Douglas fir plywood forms surfaces easy to decorate for temporary store fronts and provide safety and privacy at low cost

★ INDUSTRIAL USES

The demand for smooth, rugged car linings which would have a minimum of joints, and would be proof against dust, cinders, and condensation, has led to many of the great transcontinental lines adopting Douglas fir plywood for both ceilings and wall lining in thousands of new box-cars.

Ruggedness without excessive weight is a prime factor in the adoption of Douglas fir plywood in the entire transportation field. The modern streamline train, auto and truck bodies, buses, airplane mock-ups, the ubiquitous trailer, portable shipping containers, and cargo trailers are but a few examples where industries have capitalized on the strength properties of plywood panels. Outside of the transport field, Douglas fir plywood finds application in toys and games, furniture of all kinds, trunks and suitcases, and scores of other industries.

★ HOT-PRESSED PLYWOOD FOR EXTERIORS

Although plywood made with cold water-resistant glues has proved its serviceableness in concrete formwork and other severe uses, there has been an increasing demand for a Douglas fir plywood that would be permanently "foolproof and waterproof" for exterior uses involving high moisture hazards, such as outside walls of houses, boats and surfboards, sign-boards, and linings for refrigerator cars. Accordingly, several plywood manufacturers are now producing resin-glued plywood in which the veneers are bonded by means of hot-pressed resin glues, universally recognized as the ultimate in waterproof adhesives.

This new departure in Douglas fir plywood, already proved through many years of experience in the United States and Europe, opens up entirely new fields for the giant fir plywood panels. This 100% waterproof, permanent product for exterior service supplements the standard plywood panels so successfully employed for a host of interior uses and for less permanent exterior purposes, and makes Douglas fir plywood available in suitable grades as a material for practically any purpose.

★ FINISHING DOUGLAS FIR PLYWOOD

A great variety of attractive finishes may be obtained with Douglas fir plywood.

Only materials of the best quality should be used, whether mixed on the job by the master painter and decorator, or bought in the prepared form from a reputable manufacturer. In either case, have the work done by a competent, skilled painter and decorator. Where prepared paints are used they should be appliel in strict accordance with the manufacturer's directions.

For General Purpose Decoration

New Douglas fir plywood interiors should be given at least three coats of paint mixed according to the formulas on the following chart and tinted, if desired, with pure colors in oil.

	Priming coat	Second coat		Flat finishing coat		Semi-gloss finishing coat	
		A*	B*	A*	B*	A*	B*
All Purpose Soft Paste White Lead	100 lb.	100 lb.	100 lb.	100 lb.	100 lb.	100 lb.	100 lb.
Raw Linseed Oil	3 gal.						
Turpentine	2¼ gal.	1¼ gal.		1¾ gal.		¾ gal.	
Flatting Oil, Lead Mixing Oil or Lead Reducing Oil			2½ gal.		2½ gal.		2 gal.
Floor Varnish		¾ gal.		1 pt.		1¼ gal.	1 gal.
Liquid Drier	1 pt.	½ pt.		½ pt.		½ pt.	
Gallons of Paint	8½	5¼	5½	5	5½	5¼	6
Coverage per gallon (approx.) square feet	700	800	800	800	800	800	800

*Either formula A or B may be used in each case, depending upon availability of materials and personal preference of the decorator.

Variety Finishes For Interiors

The variety texture known as stippling is one of the simplest, commonest and most satisfactory interior finishes. It is accomplished by striking the wet paint with a wall stippling brush. It eliminates brush marks and imperfections in the surface.

In addition, there are a great number of figures, such as crumpled roll, sponge mottle, modernistic, tiffany and glazes, and finishes accomplished with masking tape and stencils, that any capable decorator can produce.

Furthermore, finishes with a certain amount of relief, providing texture and depth, can be produced with white lead plastic paint for the finishing coat. This paint is mixed as follows:

All Purpose Soft Paste White Lead	100 lb.
Dry Whiting	22 lb.
Pure Turpentine	¾ gal.
Floor Varnish	½ gal.
Drier	¼ pt.
Gallons of Paint	5 gals.
Coverage per Gallon (approximate)	140 sq. ft.

With this paint, such effects as travertine, vein relief, swirl overlay, caenstone, tapestry, basket weave, waving reed, bamboo and others may be produced by competent decorators.

Staining Interior Woodwork—Apply resin sealer and one coat of oil stain of color desired. Knife putty all nail holes with colored putty to match the stained woodwork and sand lightly.

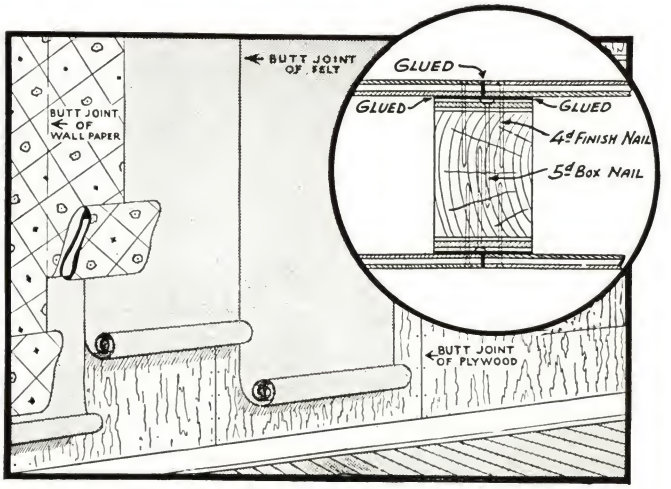
Second Coat (Sealer and Surfacer)—Apply one coat of pure white shellac thinned according to manufacturer's directions, and sand lightly when dry.

Finish—Apply two coats of interior gloss varnish, sanding between coats, allowing ample time for drying before sanding. Rub down gloss finish with pumice stone and oil until the desired appearance is obtained.

Dull Finish—Apply two coats of recommended flat varnish.

Natural Finish—Attractive and economical natural finishes may be obtained by using one or two coats of pure white lacquer, sanding after each coat, and one or two coats of wax. Shellac may be used in place of lacquer.

Skilled painters and decorators can obtain various finishing effects specified by the architect. Strikingly beautiful results may be obtained by wire-brushing or sand-etching to remove part of the softer springwood.



Felt or muslin, butt-jointed, is recommended underlay for wallpaper. Inset details crack-proof panel joint

Wallpaper—Plywood may be papered, when desired, without difficulty. Care should be taken to see that the wall studs are well-seasoned so that there will be no shrinkage to cause hair-cracks between the panels. Cheap building felt or muslin as a base for the paper is generally recommended. The joint detail E on page 7 is especially adapted for use under wallpaper.

For Exterior Uses

Edges are preferably knifed with white lead. Outside surfaces of plywood exposed to weather should be finished carefully with three coats of high-quality paint. In extremely damp localities, the interior should be coated also.

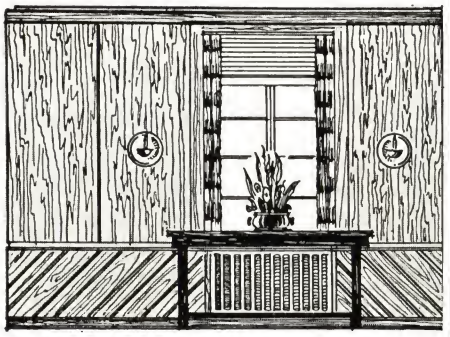
Priming—Without exception, ready-mixed paints used for priming should be reduced with pure raw linseed oil—usually with one gallon of oil to one of paint. Apply subsequent coats as the paint manufacturer recommends.

In mixing aluminum paint, which is especially moisture-resistant, use only high-grade vehicles—such as kettle-bodied oil or long oil spar varnish. Do not use ordinary boiled oil or raw linseed oil. Many paint manufacturers now offer a vehicle specifically prepared for aluminum powder.

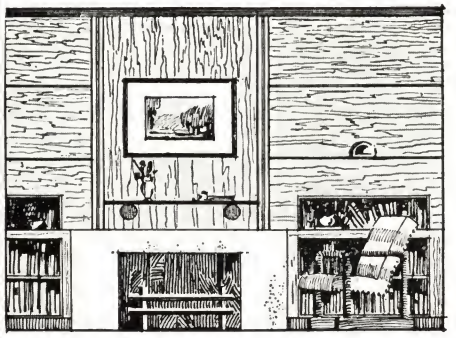
Methods of Application—On large unbroken surfaces, apply priming and subsequent coats like calcimine—sweeping the brush in semi-circular fashion. If the surface is small or broken by paneling, etc., follow the grain.

Use driers very sparingly. Never use shellac on Douglas fir plywood exposed to weather.

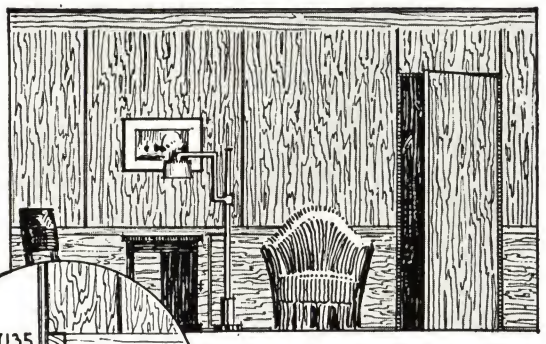
Douglas Fir Plywood is Perfect Material for Expression of Modern Interior Themes - - INEXPENSIVELY



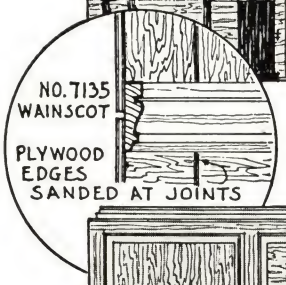
Vertical Plywood sheets with diagonal wainscot



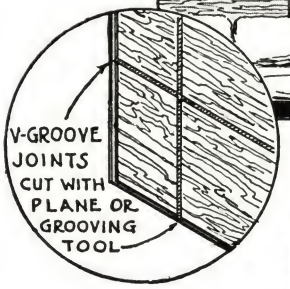
Mixed horizontal and vertical sheets of Plywood

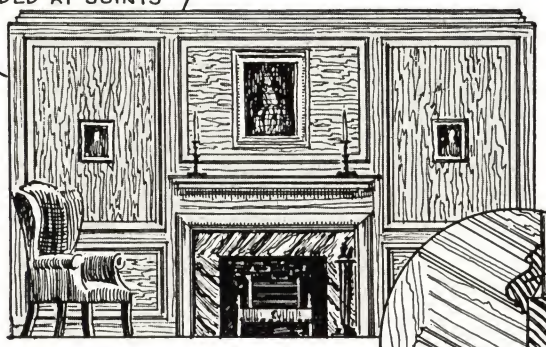


Vertical Plywood panels with horizontal wainscot

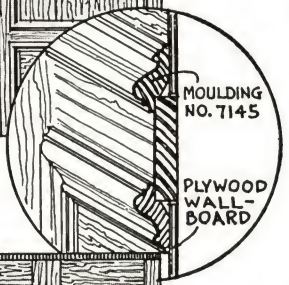


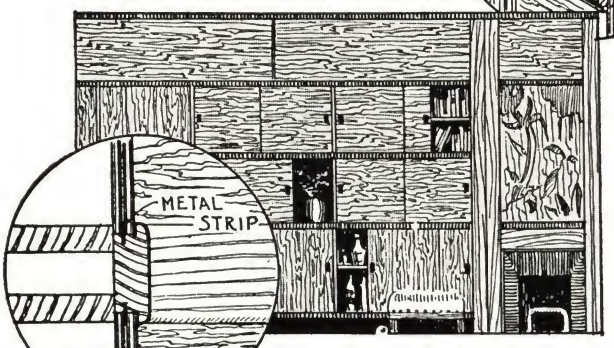
Horizontal Plywood in small sheets with "V" grooved design



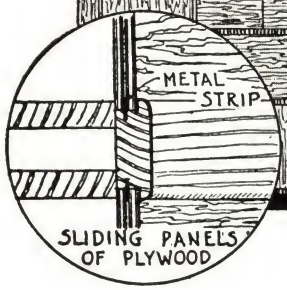


Plywood sheets used as large flat panels---with rails and moulding



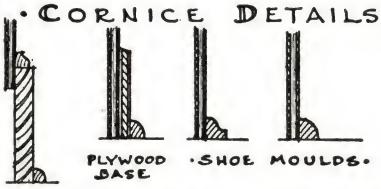


Sliding Plywood doors

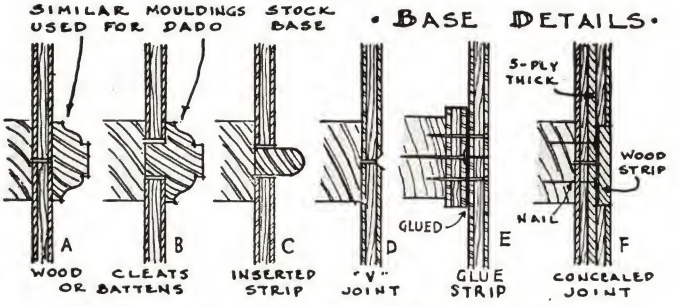


STOCK METAL MOULDING

TO EMPHASIZE SMALL MOULDINGS AND GROOVES— FINISH IN A TONE OR COLOR CONTRASTING WITH THAT OF THE WALL



SIMILAR MOULDINGS USED FOR DADO



• VARIOUS JOINT TREATMENTS •

INTERIOR WALL DESIGNS USING PLYWOOD

★ TEST DATA ON DOUGLAS FIR PLYWOOD

In order to present a general comparative picture as to the strength properties of Douglas fir plywood, and other materials sometimes used in its place, the results of a series of tests conducted at the Northwest Testing Laboratory, the Northwest representative of the nationally-known Pittsburgh Testing Laboratory, are summarized at the right:

In the tension tests, all specimens were 3″x18″; in the compression tests, 6″x6″ pieces were used. Tests on each material were conducted under exactly the same conditions.

Thickness of material	Tension		Compression	
	Ultimate load	Ultimate stress	Ultimate load	Ultimate stress
LOAD ACTING WITH THE GRAIN OF FACE PLIES				
1/4″, 3-ply	5250	6484	4198	2855
3/8″, 3-ply	5644	4750	6630	2860
1/2″, 5-ply	8024	5135	10492	3497
5/8″, 5-ply	8132	4350	10644	2893
3/4″, 5-ply	8912	4074	18538	4186
LOAD ACTING ACROSS GRAIN OF FACE PLIES				
1/4″	2552	3291	908	609
3/8″	4684	4141	5206	2180
1/2″	7664	5108	6462	2162
5/8″	8326	4491	9096	2472
3/4″	8796	3932	15262	3436
TESTS ON OTHER MATERIALS				
A-3/16″	1248	2189	390	346
B-3/16″	1276	2180	846	751
C-1/4″	264	352	826	550
D-7/16″	152	126	448	170
E-1/2″	370	248	690	230

Key: Material A, old-style fibre wallboard; B, hard, compressed board; C, plaster-board; D and E, insulating boards.

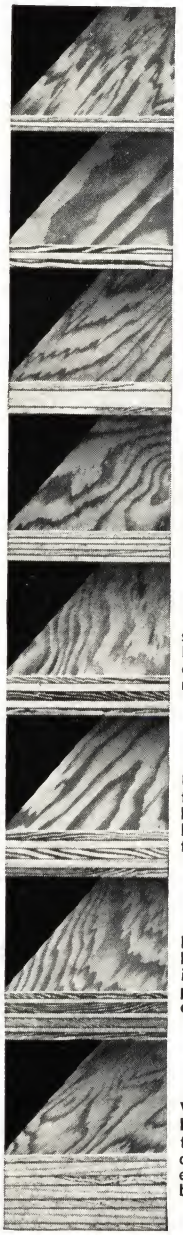
Nail-Pulling Tests—Nail pulling tests were also made on Douglas fir plywood, and the other materials tested in tension and compression, to ascertain their resistance against nail-heads pulling through, when the materials were nailed to a wood base. Eighty-five per cent of the cement coated box nails (a more severe test) used with the plywood were pulled out of the base when the plywood was pulled loose, whereas every other material was pulled loose without removing a single nail; the nail-heads simply punctured the other materials. With plywood the load required varied from 131 to 138 pounds for each 4 d box nail up to 275 pounds with 8 d box nails; for the other materials (excepting material B) loads averaged only from 45 to 59 pounds per nail for 1½ galvanized roofing nails and 4 d box nails. Material B with 4 d box nails, required from 92 to 101 pounds per nail.

The superior hardness and splitting-resistance of Douglas fir plywood were evident.

Flexural Tests—Deflection curves, based on a comprehensive series of tests conducted at the Forest Products Laboratory of the University of Washington, are shown on Page 11, under concrete form panels.

These tests show that 5/8-in. plywood sheathing is equal to diagonal flooring as to strength and deflection and furnish the engineer and architect with data to permit use of plywood in a multitude of structural designs.

Representative Plies and Thicknesses of DOUGLAS FIR PLYWOOD



¼ in.—3 ply
Used largely for drawer bottoms, case and picture backs, and toys. Most Douglas Fir Plywood wallboard is made in this thickness.

⅜ in.—3 ply
Manufacturers of refrigerators, trunks, kitchen cabinets, store fixtures, auto body parts, and instrument cases use this construction.

½ in.—3 ply
This is an economical shelf material for cabinets of all kinds. Also used in auto body parts, incubators, etc.

½ in.—5 ply
This construction is superior to that just above, both in tensile and in transverse strength. When ½ in. is required in large sheets this construction is recommended.

⅝ in.—5 ply
In floor boards, lock boards, seat frames and other automobile body parts and for concrete forms, etc., this thickness finds especial favor.

¾ in.—5 ply
Used by auto body manufacturers preferring a heavier floor board. Also recommended for heavy shelf construction, store fixtures, concrete form lumber.

⅞ in.—7 ply
Furnishes extraordinary, well-balanced strength. Much used in ship building for bulkhead panels, stateroom partitions, etc.

1 3/16 in.—7 ply
Widely used for instrument boards, ice machine bases, desk tops, bus seats and a variety of other purposes requiring an exceptionally strong and rigid board.

TABLE OF DOUGLAS FIR PLYWOOD STANDARD SIZES

Item	Widths	Lengths	Thicknesses
Standard Panels	From 12″, increasing by 2-in. units to 30″; also 36″, 42″, and 48″	48″, 60″, 72″, 84″, and 96″	3/16″ (3-ply sanded 2 sides) increasing by 1/16″ thicknesses to 1 3/16″ (7-ply)
Wallboard	30″, 32″, 36″, and 48″	60″, 72″, 84″, and 96″	3/16″ unsanded; ¼″, 3/8″ 3-ply sanded 2 sides; and ½″ 5-ply sanded 2 sides
Sheathing	48″	60″, 72″, 84″, and 96″	5/16″ and 3/8″ 3-ply unsanded, and 5/8″ 5-ply unsanded

Douglas Fir Plywood Grades

(See U. S. Commercial Standards, CS45-36)

Good Two Sides (G-2-S)—This grade is intended for natural or light stain finishes. Both faces are clear and 100% heartwood of a yellow or pinkish color.

Good One Side (G-1-S)—One face is the same as that described under Good Two Sides grade, while the opposite face is the same as the Sound Two Sides grade described below.

Sound Two Sides (SO-2-S)—This grade presents a smooth, sound surface on both sides suitable for painting. The faces may be of one or more pieces of firm, smoothly cut veneer. If of more than one piece, they will be well-joined and reasonably matched for grain and color at the joints. Sap and natural discoloration are considered no defect.

Wallboard (W-B)—The face side is the same as described under Sound Two Sides. The opposite side contains defects in number and size that will not affect the strength or serviceability of the panel.

Sheathing—Both faces of this 3-ply 5/16-in., 3/8-in. and 5/8-in. unsanded plywood contain defects which will not seriously affect strength or serviceability.

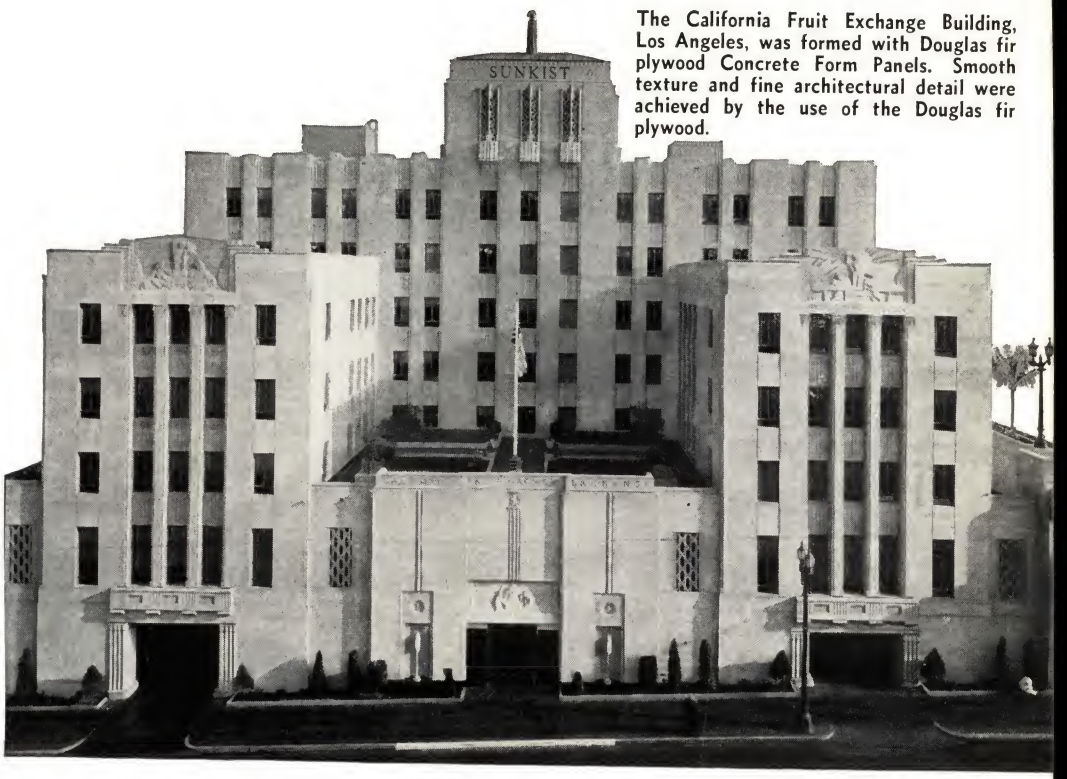
Concrete Form Material—(Made in standard panel dimensions with special highly water-resistant glue). 5/8-in. thickness is recommended for most form jobs, but ½-in., 9/16-in., 11/16-in. and ¾-in. panels are stocked in standard panel widths and lengths. Both faces are carefully selected and sanded so that concrete surfaces will be smooth and true, thus eliminating costly rubbing labor. When specified, panels will be mill-treated with special water-repellant oil at nominal cost. Panels ¼-in. thick are available as form liners and for curved surfaces.

Automobile and Industrial Stock—(Rough). In ½-in. to ⅞-in. thicknesses. Faces are free from knot-holes, but tight knots are admitted.

For SMOOTH, FINLESS CONCRETE . . .

Specify DOUGLAS FIR PLYWOOD

Concrete Form Panels



The California Fruit Exchange Building, Los Angeles, was formed with Douglas fir plywood Concrete Form Panels. Smooth texture and fine architectural detail were achieved by the use of the Douglas fir plywood.

★ *UNIQUE NEW FORM MATERIAL*

Few developments in building construction have so quickly commanded acceptance in every section of the country as the new specially-fabricated-and-treated Concrete Form Panels of Douglas fir plywood. Already, therefore, the following special advantages of this unique new material—which serves as sheathing-and-lining combined—have been demonstrated on thousands of buildings, bridges, viaducts, residence foundations and cellars, and other structures requiring flawless surfaces.

1. Highly water-resistant—may be used 7 to 15 times and more.
2. Saves 40% to 75% carpentry labor.
3. Speeds up stripping.
4. Gives smooth, finless surfaces immediately.
5. No costly rubbing or plastering necessary.
6. Split-proof, non-bulging, ideal for reverse molds.
7. Giant sizes reduce lineal footage of joints. (Stock sizes up to 4 x 8 ft., larger sizes on special order.)

Although the ⅝-in. thickness is preferred where a number of reuses are desired, ¼-in. stock plywood is popular for lining forms, particularly for arches and other curved surfaces, where only one or two uses are needed.

Because of economies of labor and salvage the *⅝-in. panels cost less than ordinary form materials.*

This new form material is made of thin sheets of selected old-growth Douglas fir, laminated with alternating grain direction for split-proof, warp-resistant strength. These sheets are bonded with a special glue that is highly water-resistant and far stronger than the wood fibers themselves. Finally each panel is sanded and thoroughly treated with a water-repelling agent developed especially for fir plywood.

This double waterproofing protection gives these special panels stamina for 7 to 15 reuses, after which they are still suitable for sheathing, subflooring, and other utility uses.

★ *SAVES 40% TO 75% CARPENTRY LABOR*

With these giant panels—4 x 8 ft., or even larger on special order—carpenters can erect forms with only a fraction of the handling, sawing and nailing required by ordinary lumber, and the use of the ⅝-in. panels saves all the extra labor of lining forms.

Concrete Form Panels of Douglas fir plywood also reduce the labor cost of fastening reverse molds. These can be nailed or screwed close to the edges of the plywood without fear of splitting. Even the smallest brad may be easily driven without previous drilling.

For curved forms, the ¼-in. panels can be bent without steaming to a radius as small as 15 inches.

Douglas fir plywood can be cut easily with either power or hand saws. Also it is remarkably lightweight in proportion to its extraordinary strength. A 4 x 8 ft.

Lower left: Schmitz Park Bridge, Seattle, a long rigid span of cellular concrete formed with Douglas fir plywood Concrete Form Panels.

Lower right: Triborough Bridge, New York, winner of the 1937 award for architectural excellence, owes part of its magnificence to the unblemished concrete surfaces formed with Douglas fir plywood Concrete Form Panels.

panel of 5/8-in., for example, weighs only about 55 lbs., and a 1/4-in. panel of the same size weighs only about 24 lbs. Whole sections of forms can be hoisted easily into place.

Specially shaped or shiplapped edges may be obtained on special order at little extra cost. In some types of forms, such edges eliminate fillets and quarter rounds, and simplify dismantling.

★ NO COSTLY RUBBING OR PLASTERING

So smooth are the sanded surfaces of this material, and so greatly do the large, tight-fitting panels reduce the footage of joints, that practically no rubbing is necessary. The joints stay tight because of Douglas fir plywood's stubborn resistance to shrinking and swelling. Thus all the moisture is retained in the concrete preventing honeycombed surfaces, as well as "fins."

Douglas fir plywood's virtual elimination of rubbing means a saving in this one respect alone of 5¢ to 15¢ a square foot. And if stucco or paint is desired, the smooth surface requires much less of either, and of course much less labor. The fact that Douglas fir plywood requires no overlapping edges means that 1000 sq. ft. of it cover 1000 sq. ft. of surface, thus saving the cost of the extra 20 to 30 per cent of material ordinarily allowed for matching and cutting.

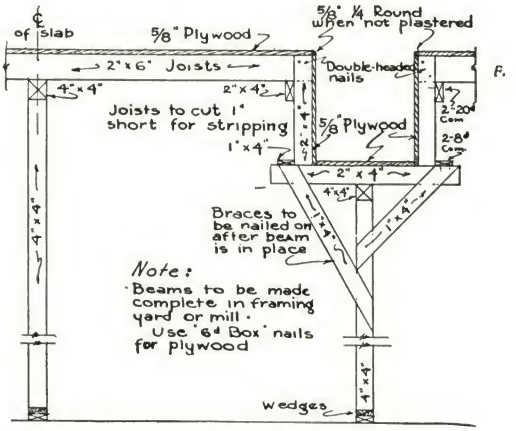


Figure 1

Figure 1—The beam and slab form in figure 1 indicates the simplicity of plywood for formwork.

Beam sides and bottoms, like column panels, can be fabricated in the shop with a simple jig for spacing the 2x4-in. supports to which 8-ft. plywood panels are nailed. The light weight of plywood and absence of cleats make easy the handling of such built-up forms.

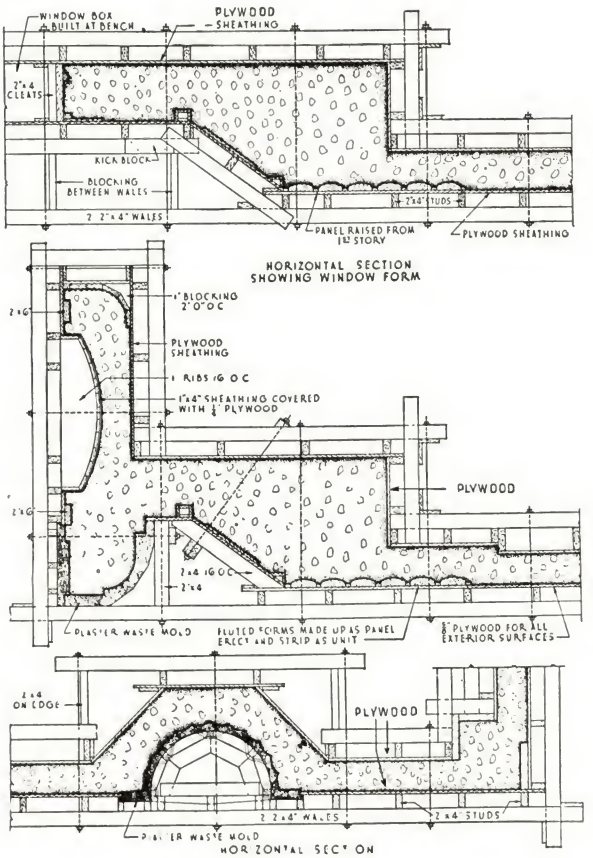
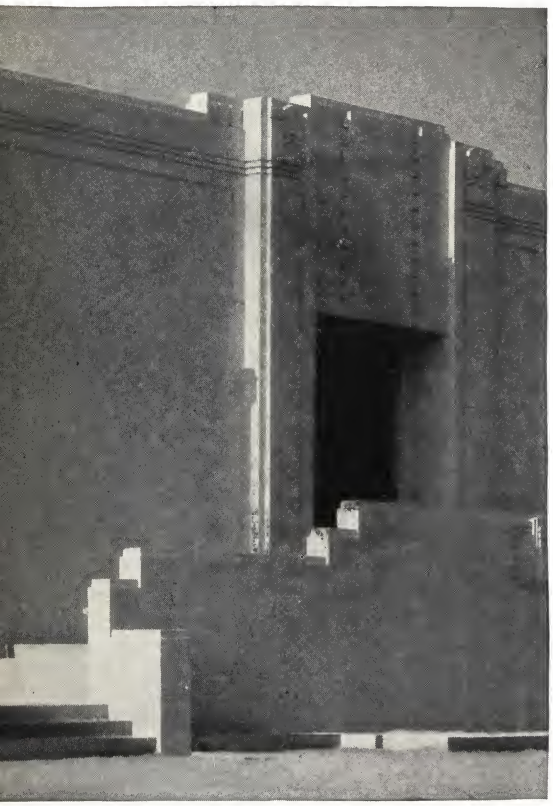


Figure 2

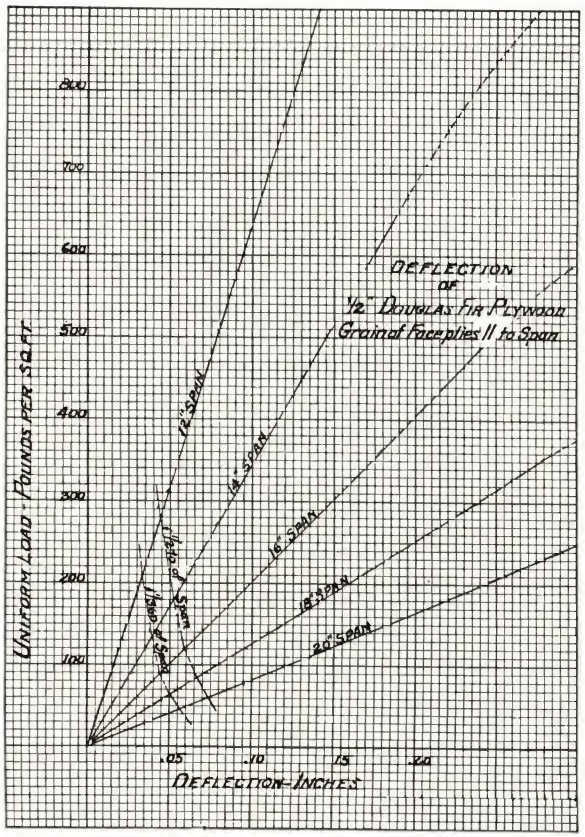
Figure 2—Figure 2 is taken from a typical job. The architect's design called for a relatively smooth finish to which plywood form sheathing was well adapted.

The versatility of Douglas fir plywood is evidenced by its use as sheathing for exterior walls, both flat and curved, and as a base to which are attached various moldings, boxes, and other items that will produce desired architectural features.



Above: **The fine architectural detail of the Grover Cleveland Elementary School, Pasadena, was obtained with Douglas fir plywood Concrete Form Panels.**

Right: **Smooth monolithic residence foundations are formed with Douglas fir plywood Concrete Form Panels. Reuse of these standardized form units on similar foundations introduces new economies.**



★ QUICK STRIPPING

The giant Douglas fir plywood panels make it possible to strip forms in a fraction of the usual time, and the rugged, laminated construction of this material minimizes dismantling damage.

★ EXTRAORDINARY STRENGTH

The remarkable strength of Douglas fir plywood—demonstrated by laboratory tests and actual experience—means that the panels will never crack or bulge, when properly supported.

However, studs should not be spaced farther apart than on ordinary lumber forms. As in all concrete work, if pouring is faster than 3 ft. an hour, special care with bracing, waling strips and ties is necessary. When the ¼-in. lining is used, the forms need not be built up solidly with lumber. Spacing between the boards can be from 2 to 4 inches.

Deflection Charts

These charts show deflection of Douglas fir plywood when acting as a simple beam, i.e., resting on only two supports, *without any nailing.*

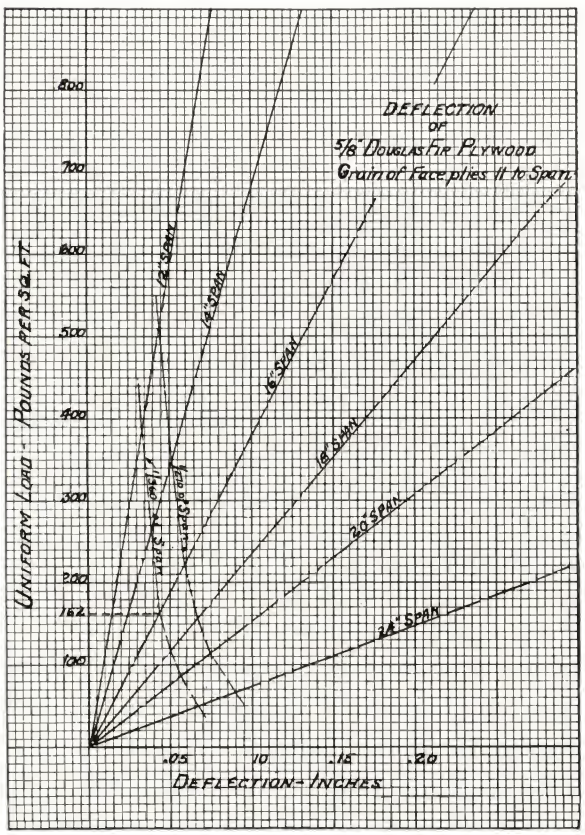
The charts are based on a comprehensive series of tests conducted recently at the Forest Products Laboratory of the University of Washington. The results are in accord with the theoretical deflections computed as tentatively recommended by the United States Forest Products Laboratory at Madison, Wisconsin.

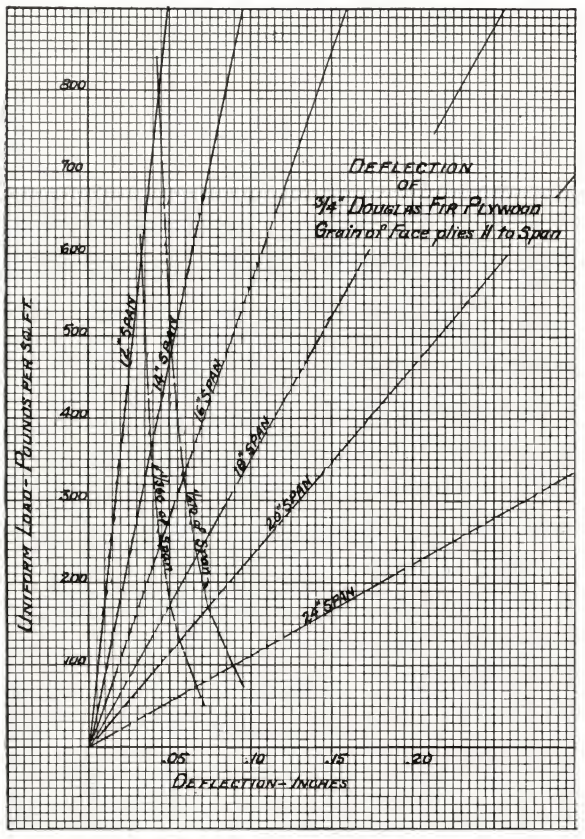
For convenience, lines have been added to show deflection of 1/360th and 1/270th of the various spans. For example, using ⅝-in. plywood over a 16-in. span, with deflection limited to 1/270th of span, as in most concrete work, a loading up to 221 lbs. per square foot may be used. If the supports are placed only 12 in. apart, the loading may be increased to 510 lbs. per square foot.

If load is continuous over two or more spans, the deflection will be approximately ½ that shown, and therefore, twice the load shown may be used.

The charts show the deflections of Douglas fir plywood when the grain of the face plies is parallel to the span, i.e., when panels are placed lengthwise across the supports. When panels are placed parallel to the supports, the loads causing any given deflection will be smaller than shown on the charts, as follows:

For ½-in. thickness, use 40% of load on chart;
For ⅝-in. thickness, use 50% of load on chart;
For ¾-in. thickness, use 75% of load on chart;
for any given span and allowable deflection.





37—Printed in U. S. A.

DOUGLAS FIR PLYWOOD

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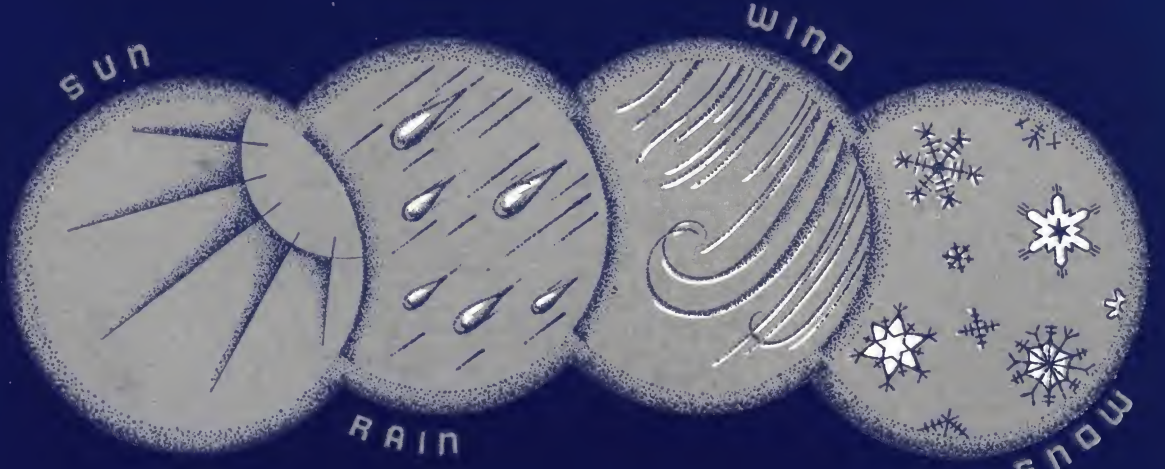
NO WEATHER MADE

CAN HARM THIS PLYWOOD



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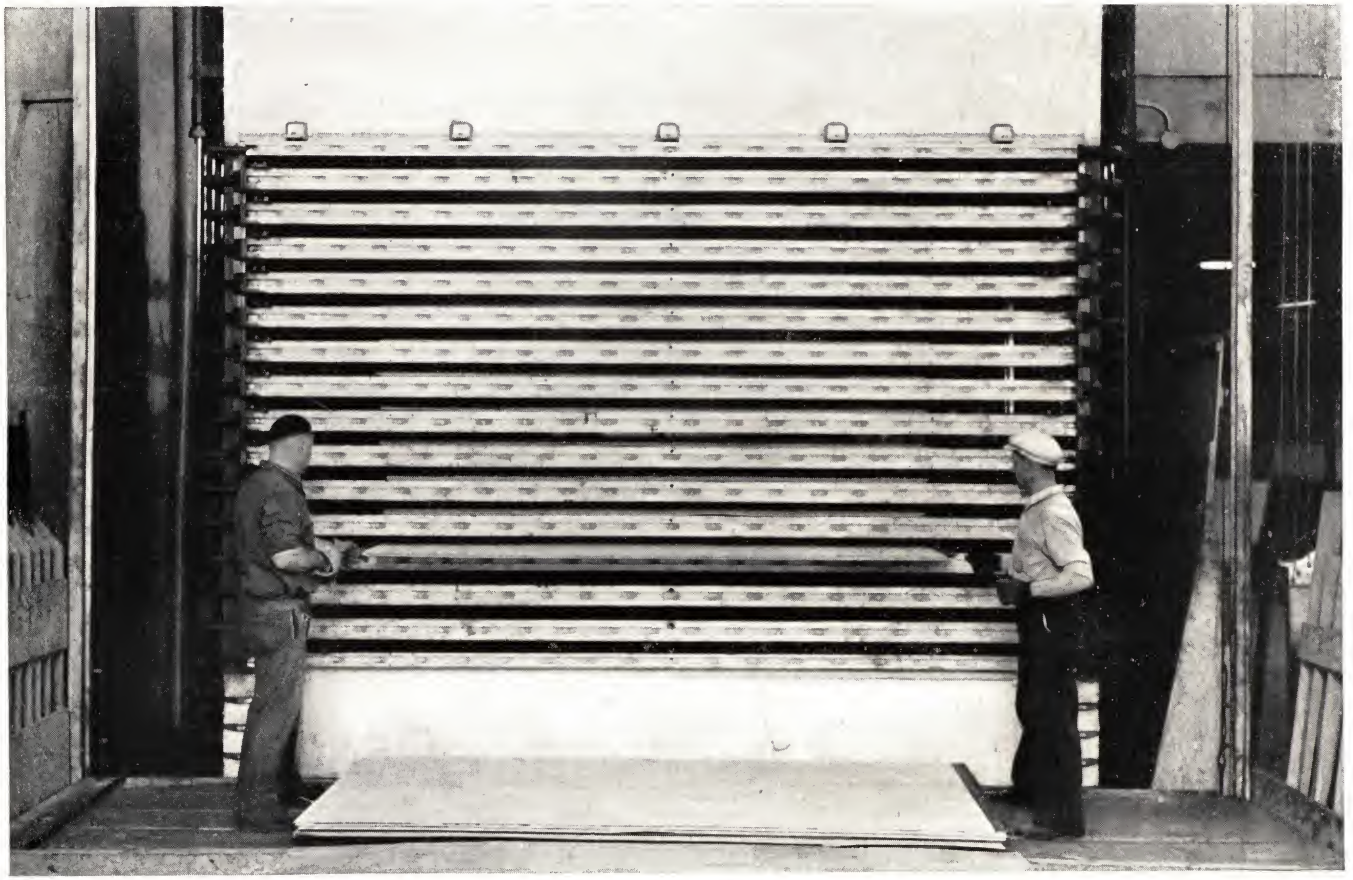
Where PLYWOOD *goes* MODERN

One of SUPER-*Harbord* Hot Plate Presses



THE BINDER AND THE PRESS . . . . . .

constitute the two basic reasons for Super-Harbord's claim to outdoor durability. First, the artificial resin substance developed in Harbord's own laboratories (see details next page) and patented by the HARBOR PLYWOOD CORPORATION and second, the modern hot-plate press which, through heat and tremendous pressure applied simultaneously, welds the plies together to form, in effect, one solid piece of lumber with all the advantages of lamination. Modern ingenuity developed the press, modern science the welding bond and modern machinery finishes the product so that modern architects, builders and contractors can keep pace with the times.

Quality Control

The buyer's assurance of quality in Super-Harbord is safeguarded by the fact that Harbord operates the only mill in the plywood industry with a complete research laboratory equipped with scientific apparatus and manned with competent chemists and engineers, not only engaged in research work, but also, controlling the manufacturing process and materials at every step of manufacture.

HARBOR PLYWOOD CORPORATION • *Mills and General Offices* • HOQUIAM, WASHINGTON

SUPER-*Harbord*

• THE OUTDOOR PLYWOOD •

UP to the present time there has never been any reasonably priced plywood manufactured which would withstand constant exposure to moisture and moisture changes. This lack of full utility has hindered the architect and builder in making adequate use of the product. Indoors he has been able to achieve remarkable effects in beauty, design and economy—outdoors he has perhaps been somewhat discouraged because of the need for a product equal to the job. It was that plus quality he looked for. In Super-Harbord he gets just that.

In simple terms Super-Harbord is ordinary plywood which science has taken by the hand and refined. From every standpoint it is an advanced product—in lighter weight, greater strength, smoother surfaces, higher durability under all conditions; in positive weather proof quality and resistance to molds, fungi and insects through the rot-proof binder. It can be used advantageously wherever ordinary plywood is used and to far greater advantage in all outdoor and many special uses where the wood is subjected to extremes of temperature, bad weather conditions and insect infestations. Every panel is unconditionally guaranteed against separation of plies.

The Binder

Carefully selected veneers are fused together under tremendous pressure and heat by means of the strongest kind of binding agent yet devised—a resin-base bond, patents on which are held exclusively by the HARBOR PLYWOOD CORPORATION. The binder used in Super-Harbord is not only absolutely impervious to water, under any and all conditions, but is actually insoluble in water and chemically inert. Super-Harbord does not show any separation of plies when subjected to boiling water or live steam exposures. It is also resistant to attack by mold, fungi, and bacteria. It possesses extreme flexibility, will not crystallize or crack with distortion. Yet with all this it is not abrasive as is regular commercial glue and far less damaging to the cutting edges of saws, planes, chisels and other tools.

HARBOR PLYWOOD CORPORATION • *Mills and General Offices* • HOQUIAM, WASHINGTON

BAFFLING THE ELEMENTS *with* SUPER-*Harbord* . . . . .

Newest product of Owens Yacht Company in Baltimore, Md.— in which Super-Harbord fills an important construction service.

The Super-Harbord rowboat, designed to demonstrate the simplicity and ease of building with Super-Harbord. (Below) Showing the bad result one boat owner experienced with ordinary plywood and how he is replacing with Super.

Constantly facing heavy moisture conditions, including salt spray, plywood for marine use must have maximum stamina. Boat builders and operators from Atlantic to Pacific, inland rivers and lakes, have seized upon Super-Harbord as the fitting material for decks, cabin framing, trim, instrument boards and lockers.

Over two years ago, Super-Harbord panels, without any external preservative treatment, were placed in the waters of Grays Harbor, a salt water harbor. Today, despite exposure to sun, rain, salt water and freezing, the glue lines are as good as the day they were manufactured. There has been no separation of the plies.

While Super-Harbord has been developed primarily to combat the destructive influences of moisture, insects and fungi for outdoor construction, it has certain additional advantages over ordinary plywood in connection with interior use. One of these is the more attractive appearance effected by its use for walls and ceilings. Super-Harbord can be panelled and battened over the joints like ordinary plywood, but also the joints can be filled and sanded to such perfect smoothness that, when painted, there is not even the slightest evidence of thin existence.

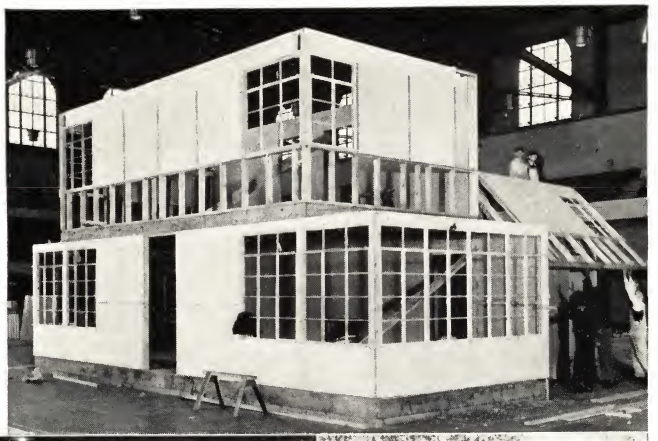
Super-Harbord has the further and very important advantage of permitting tight joints that stay tight, because it always presents an edge as clean and smooth as that of a solid single piece board. This is due to the exclusive process of Super-Harbord manufacture which prevents all core voids.

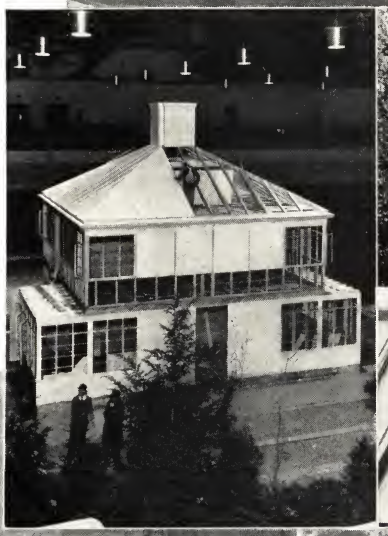
Stronger than steel, pound for pound, its ultra-smooth finish, extreme durability under all outdoor and indoor conditions make it the most "usable" building material available. Architects and builders are obtaining amazing results and outstanding modern effects with Super-Harbord in all parts of the country.

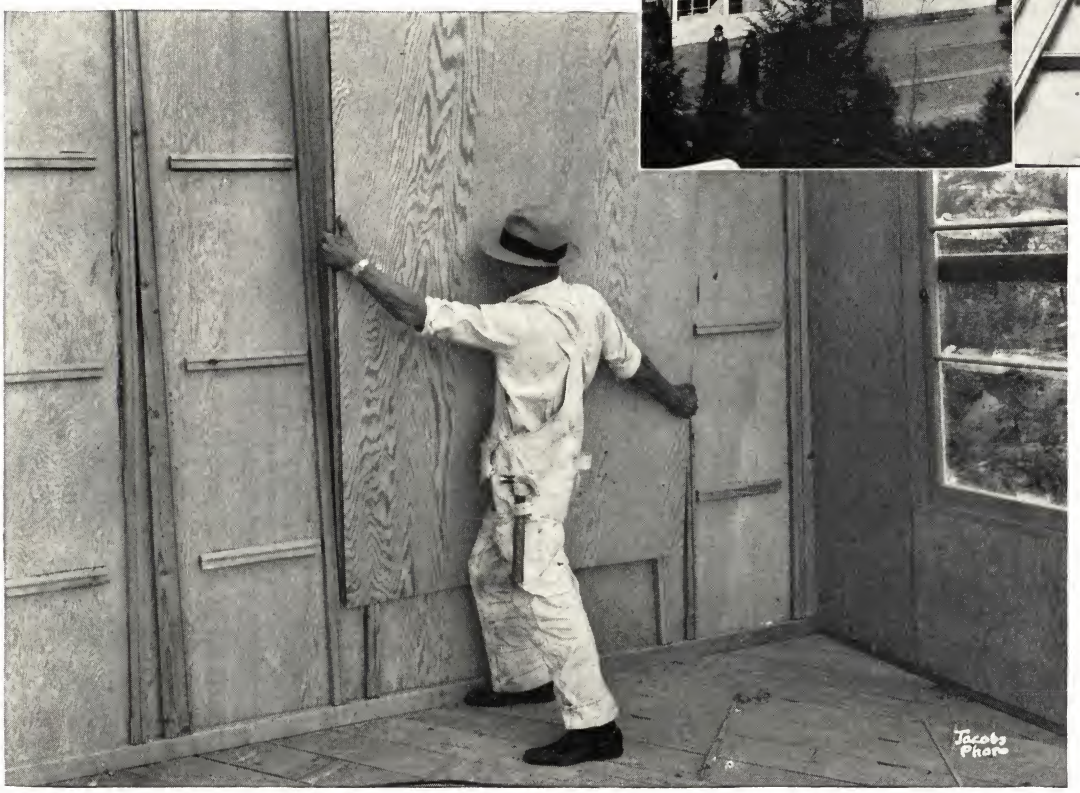
PREFABRICATION PROBLEMS SOLVED . . .

All of Super-Harbord's points of superiority make it thoroughly practical for prefabricated wall units. In fact the panel's outdoor qualities make possible a standard factory built unit complete from inside to outside wall and one more flexible for general use. Practical demonstration of Super-Harbord for such use has been made in building shows, such as the Baltimore Home Exposition and in homes recently built by various wall unit manufacturers. The unit developed by E. A. Horn (Speedwall Company of Seattle) is a good example, employing the use of Super-Harbord exclusively.

With the Speedwall, units are standardized in one size only, all window and door openings being built up as a separate unit and inserted in the wall wherever wanted by cutting a wall unit at the desired point. The piece cut off is used on the other side of the door or window unit. There is no waste. These units weigh approximately 60 pounds each and one man may handle with ease. However, a two man team makes a more efficient erection force. The standardized unit offers to the contractor, building material dealer, and developer, a combination lumber and plywood product which can be incorporated in any floor plan and small building design—in other words, it is a plywood building unit, just as brick and tile are masonry units except that six of these plywood wall units will build 100 square feet of walls. These walls may be filled with a loose-fill insulation when desired.





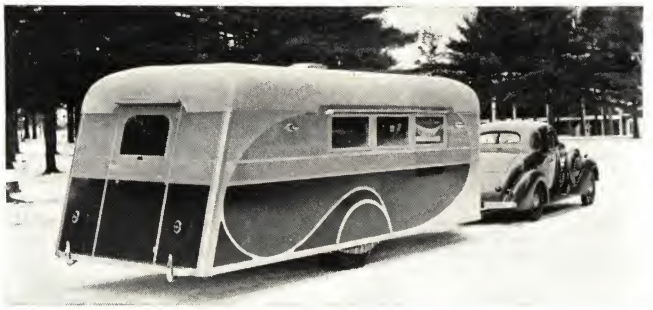


The Speedwall is unique in that it permits absolute flexibility of design, length of walls or partitions, and places no restrictions upon size or location of door or window openings. It has the further advantage of being readily marketed through retail dealers or other customary building channels.

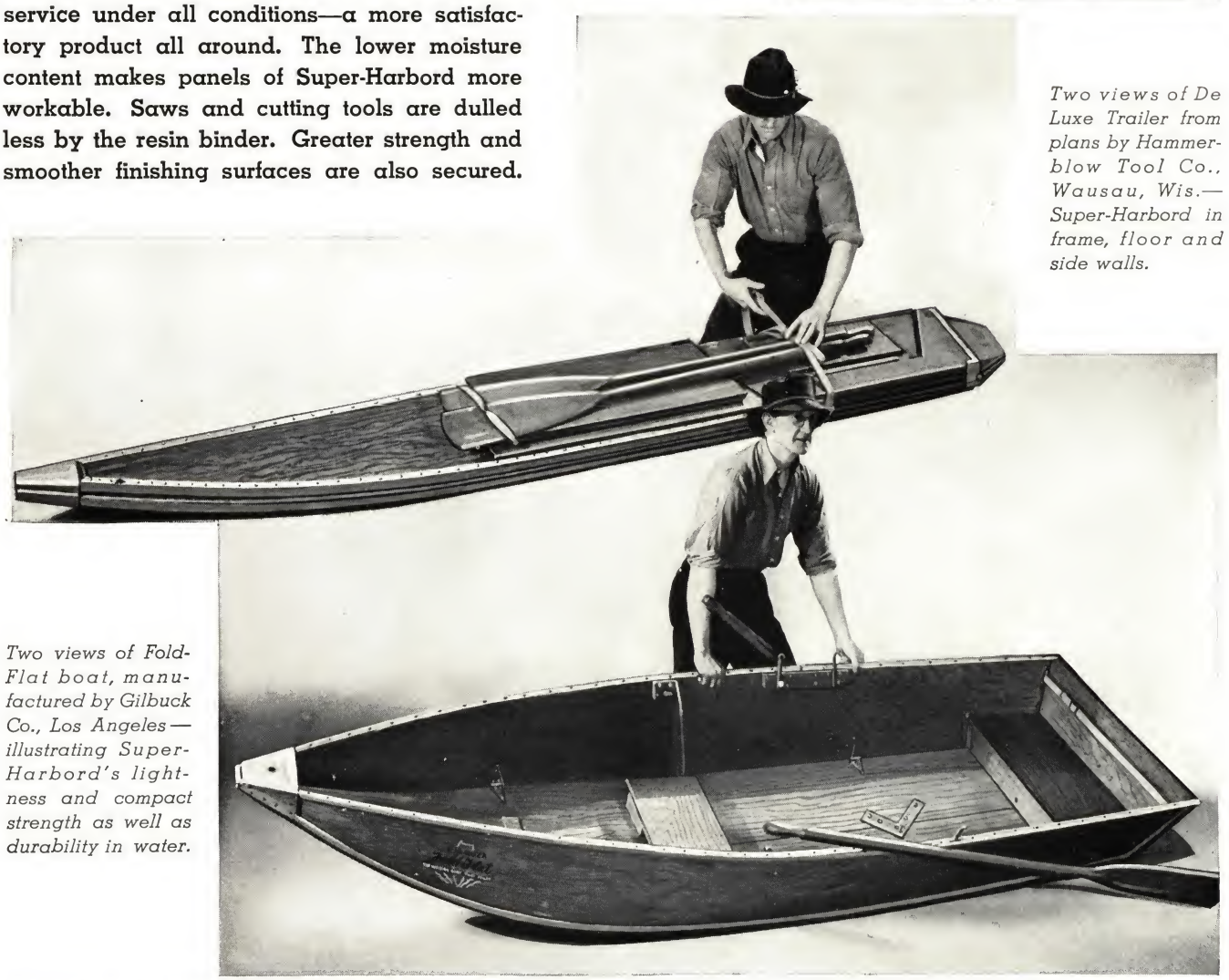
SUPER-*Harbord* FOR SUPERIOR PRODUCTS . . . . . .

Besides proving in countless ways its perfect adaptability to both indoor and outdoor building, Super-Harbord is becoming more and more a favorite material in a wide and growing field of product manufacture. This increasing popularity is due not alone to the great strength, lightness and moisture-resisting feature of Super-Harbord, but also in a considerable measure to the unusual effects and artistic joints made possible by this material, and to the additional fact that its ultra-smooth surface takes remarkable paint, stain and plastic finishes.

Business and industry have been among the first to recognize and apply the cost saving, practical principles of this plus plywood. Manufacturers of refrigerators, incubators, radio cabinets, portable and prefabricated houses, trucks and buses, trailers, outdoor furniture, boats and a host of other products can see direct profit in utilizing a plywood which gives longer service under all conditions—a more satisfactory product all around. The lower moisture content makes panels of Super-Harbord more workable. Saws and cutting tools are dulled less by the resin binder. Greater strength and smoother finishing surfaces are also secured.



Two views of De Luxe Trailer from plans by Hammerblow Tool Co., Wausau, Wis.—Super-Harbord in frame, floor and side walls.



Two views of Fold-Flat boat, manufactured by Gilbuck Co., Los Angeles—illustrating Super-Harbord's lightness and compact strength as well as durability in water.

FIRMER FLOORS . . . . .

Floors and sub-floors built of Super-Harbord have many advantages, first in soundness and durability, second in the substantial saving of labor cost. The big panels save up to 60% in sawing, handling, fitting, joining and nailing time—squeaking is cut down because of fewer edges and because nails grip Super-Harbord more tenaciously—about 20% saving over shiplap is secured because Super does not lap at the edge, every square inch being utilized. Where subfloors are laid in damp places, subject to fungi and rot, or in sections infested with termites, the use of Super-Harbord means far fewer replacements.

(Above) Super-Harbord basketball floor in University of Washington Athletic Pavilion, capable of being taken up for spring and fall field events.

Greater Strength and Flexibility with Lighter Weight

Ordinary plywood is "stronger than steel—pound for pound", yet Super-Harbord steps up this quality due to the fact that the plies are welded together—are tighter with no danger of separation. Where less sturdy materials will often fracture from a blow or continued pressure, Super-Harbord remains solid and intact, presenting a surface that will not dent nor mar easily, which resists shrinking and swelling. Panels will not sag or work loose from the nails, even when nails are close to the edge, which the laminated construction permits, without danger of splitting.

Increased flexibility and lighter weight come from these qualities of the binder. Tests have proven that the binder, after being soaked in water for days, cannot be destroyed by distortion and that the panels can stand added strain without breaking. Because the binder is a dry resinoid substance and because of the heat and pressure binding process, the moisture content can be brought much lower and held lower than with ordinary plywood. Due to this control, Super-Harbord is made with any moisture content wanted for specific purposes.

(Left) One of the buses built by the Bender Body Company of Cleveland and (below) coach by A. C. F. Motors and J. G. Brill Co. of Philadelphia, where stronger, sounder floors and other parts are secured with Super-Harbord.

BETTER SIGNS *for* BETTER TIMES

Ideally suited to outdoor sign construction, Super-Harbord is being used effectively for Store Fronts, Outdoor Advertising Bulletins, "A" Signs, Animated Figure Signs, Theatre Lobby Displays, Convention and Exposition Displays, Dealer Identification Signs, Real Estate Signs. The exclusive feature of ply-welded-to-ply by means of the resinoid binder hot-prest, renders these panels adequate to all weather conditions and the customers' demands for quality. Ease of working, permanence and ultra-smooth finish surfaces qualifies Super-Harbord for economical construction as well.

Of great advantage to the carpenter, contractor or sign builder is the lightness and ease of handling of Super-Harbord Plywood. Yet the working superiority of this product only begins here. Of primary worth is the fact that the natural resin bond is far less harmful to the cutting edges of tools than the regular commercial glue binder. Its resin base contains no abrasives whatever (such as lime, silica, etc., as in other processes) and presents no more resistance to saw teeth or plane edge than does the wood itself. Again all panels of Super-Harbord Plywood are built with sound cores.

(Left) Figure sign 7 feet high, mechanically moving head, used for convention purposes, and (left and right) Types of outdoor signs built by Foley Sign Co., Seattle.

(Top) Builder's sign which takes advantage of publicity value of Super-Harbord. (Center) Modern treatment of Super-Harbord in outdoor bulletin used by Sunset Outdoor Advertising Co., Seattle.

SUPER-Harbord
THE OUTDOOR PLYWOOD

HARBOR PLYWOOD CORPORATION • *Mills and General Offices* • HOQUIAM, WASHINGTON

THRIFT *plus* BEAUTY *with Plus* PLYWOOD

Ideas run rampant when the full nature and possibilities of Super-Harbord are understood. Indoors and outdoors alike this super panel does double duty—in furnishing the architect and builder a cost-cutting material compared with most lumber and one of wide utility. Used for ultra-modern wall panelling effects; for walls and ceilings of great strength and durability, Super-Harbord remains unexcelled. Where an exceptionally fine paint or stain surface is desired, a patented filler can be applied at the plant which reduces grain-raising to an absolute minimum.

There is no need to sacrifice either economy or appearance when designing homes or planning store and office interiors. It actually costs less to build with Super-Harbord when time of construction and length of service are considered. Coming as it does in large panels which permit quick application, Super-Harbord saves valuable time. Then, because its utility cannot be impaired by weather, moisture, rot, termites and other destructive forces, the need for future replacement is eliminated, and thus maintenance expense is greatly reduced.

At the same time the versatility of Super-Harbord in creating unusual artistic effects assures a type of beauty obtainable only with a material of this kind, a beauty still further enhanced by the exceptional paint, stain and plastic finishes to which the silk-smooth surface of Super-Harbord lends most competent assistance.

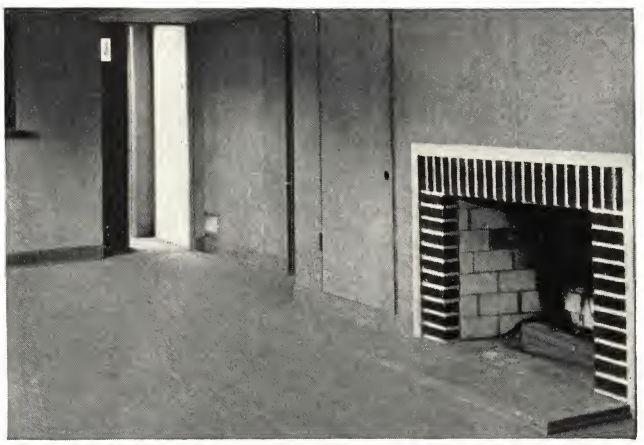
Still further attractiveness is achieved in the concrete portions of buildings by making the forms with Super-Harbord. The large size of the panels and the tight fitting joints create a beautiful smooth surface free from unsightly seams. In this eliminating costly rubbing and finishing, Super-Harbord panels offer a definite economy augmented by the fact that the same panels can be used many times without showing any tendency to separate.

For farms and country estates Super-Harbord is invaluable. The big weather-proof panels are economical and practical for barns, milk sheds, root houses, chicken and hog houses. The bond is also proof against termites and rot, and it will serve well for many years.

Farm buildings go up faster . . . last years longer . . . with this new, durable, weather-proof outdoor plywood which withstands the severest weather and moisture changes year in and year out.

Super-Harbord is being used successfully by architects and builders for bathroom and shower room walls where continued assault by water is a factor. The application of a wood filler and durable paint plus the Super-Harbord panel makes this lower cost practical.

(Above) Modern office reception room, with Super-Harbord applied in 2 foot parallel panels, finished in driftwood gray with bright colored battens. (Below) Basement recreation room.



(Below, right) Mail car, Chicago, Milwaukee, St. Paul & Pacific R. R.

HARBOR PLYWOOD CORPORATION • • HOQUIAM, WASHINGTON

(Above and below) Up to 55 re-uses of Super-Harbord panels on this Indian Creek Flood Relief project, Council Bluffs, Iowa —contractor, John Kerns Construction Co. Photo immediately above shows storage shed built of used panels after completed job.

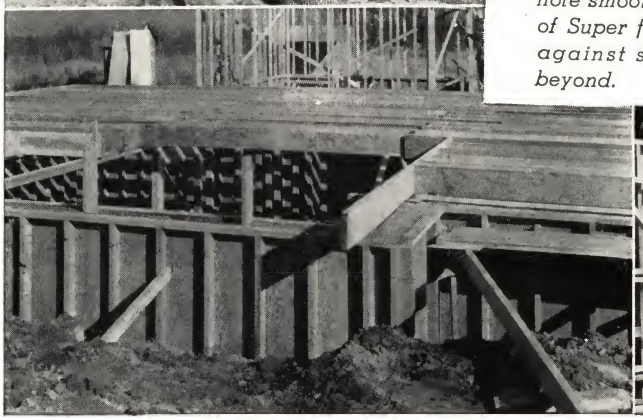
LOWER COST CONCRETE FORMS *with* SUPER-*Harbord* PLYCRETE

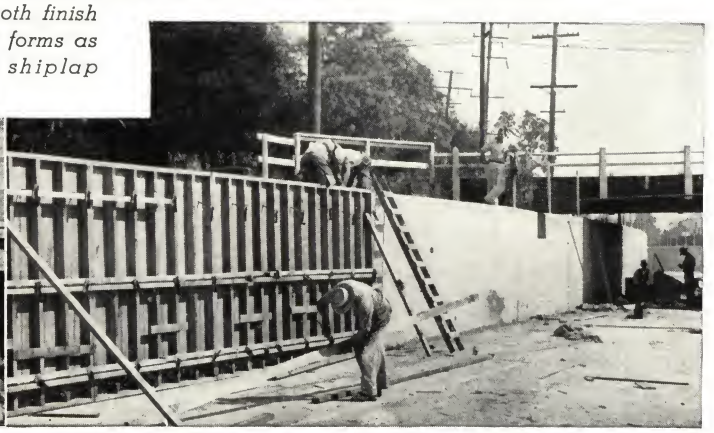
Modern contractors have found in Super-Harbord the same plus qualities that make this material so effective an outdoor construction lumber. The manufacturer's guarantee against ply separation applies to this use also and in itself signifies what contractors know—that Super-Harbord will give a maximum number of re-uses before failing. It is super efficient in the building of forms for bridge piers and docks, spandrels, retaining walls, stair beams, floors, storm drains, irrigation ditches, all structural forms and liners. Specifically Super-Harbord Plycrete has these four distinct cost saving advantages:

(1) More . . . more . . . more re-uses due to waterproof qualities and harder surfaces.
(2) Large panels make forms go up faster.
(3) Smoother surfaces and tight joints save costly rubbing and finishing.
(4) Super-Harbord gives more strength under stress and strain.

Thus every advantage ordinary plywood has over ordinary lumber is stepped up in the case of Super-Harbord Plycrete—labor costs are cut to a large extent, the work is speeded up more.

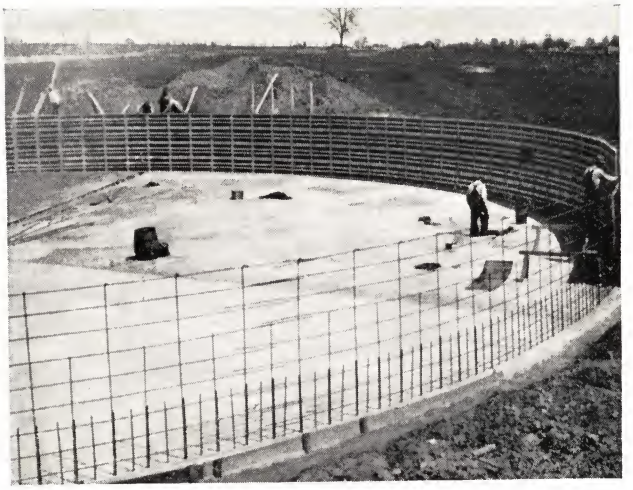
Because of its harder wood surface, Super-Harbord Plycrete presents a more durable surface to the concrete. The plies being fused together, the binder insoluble in water, the panels may be re-used many times more than even regular Plycrete. If, when unloaded, the panels are treated carefully and liberally with oil on both sides, their usefulness can be prolonged still more. A good grade of paraffin oil is recommended.





(Bottom, left) Ordinary house foundation and (bottom, right) California storm drain. In latter and in photo at top of page note smooth finish of Super forms as against shiplap beyond.

Type of metal form for concrete work manufactured by Universal Form Clamp Co., Chicago, in which Super-Harbord is used exclusively. By this combination "Walls are erected quickly, accurately and at a cost below other known methods." The two jobs illustrated are Sewage Disposal Plant, Princeon, Ind., and Bridge in Cook County, Ill.



Form costs are reduced due to the saving of carpentry labor in handling the lighter weight Super-Harbord Plycrete panels with their ultra-smooth surface. As in the ordinary plywood panel, costs in sawing, nailing, shaping, stripping, rubbing and brushing are reduced considerably.

So smooth are the sanded surfaces of this material, and so greatly do the large, tight-fitting panels reduce the footage of joints, that practically no rubbing is necessary. The joints stay tight because of Super-Harbord Plycrete's stubborn resistance to shrinking and swelling. Thus all the moisture is retained in the concrete, preventing honey-combed surfaces, as well as "fins."

With the Super-Harbord Plycrete 5-ply form all the work necessary to obtain the required size is ripping for width. This can be done right on the job, or, if time permits, at our mill. To obtain the specified sizes for beam or column forms which employ Super-Harbord Plycrete as a liner, two planks are spaced to the proper distance, fastened together by scabs, and the liner is then tacked to the opposite side of the planks, extending from outside edge to outside edge. By either method, a one-piece surface form is obtained, eliminating entirely the usual board marks left when the old type of form is stripped.

The fact that Super-Harbord Plycrete like ordinary Plycrete requires no overlapping edges means that 1,000 square feet of it cover 1,000 square feet of surface, whereas 1,200 square feet of shiplap would be required for the same area. Moreover the $\frac{5}{8}$" panels cost less than shiplap with suitable lining.

For curved forms, the $\frac{1}{4}$" panels can be bent without steaming to a radius as small as 15". If steamed for a few minutes, this thickness can be bent to an 8" radius. In reverse moulds, the panels can be nailed or screwed close to the edges without danger of splitting.

Super-Harbord Plycrete can be cut with either hand or power saws, and it will save on the re-sharpening as the non-abrasive resin binder keeps them sharp longer.

Specially shaped or shiplapped edges may be obtained on special order at little extra cost. In some form construction such shaped edges make fillets and quarter rounds unnecessary and simplify dismantling.

Stripping is likewise made easier by the use of these large panels and their rugged cross-grained construction resists damage in dismantling.

In carload lots shipped directly from our mill, we will, if it is specified, furnish the form panels treated with special water-proofing material at a small extra cost.

Deflection charts and special information in regard to concrete form uses will be furnished upon request.

SUPER-Harbord

THE OUTDOOR PLYWOOD

NOW AVAILABLE THROUGHOUT THE UNITED STATES

at dealers displaying this sign . . . .

The Harbor Plywood Corporation maintains branch offices, distributing warehouses and representatives in the following cities. Communications addressed to the HARBOR PLYWOOD CORPORATION in any city will receive prompt attention.

HARBOR · PLYWOOD · CORPORATION

Mills and General Offices: Hoquiam, Wash.

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ARTHUR J. RIESER PANEL & VENEER CO., INC.

TELEPHONE
CAledonia 5-2222

156 East 30th Street
NEW YORK, N. Y.

OVER A MILLION SQUARE FEET OF PLYWOOD TOPS AND PANELS CARRIED IN STOCK FOR IMMEDIATE DELIVERY

Rieser Plywood

Scientifically built for greatest strength and lightest weight, Rieser Plywood is preferred by architects, architectural woodworkers, contractors, shipbuilders and aircraft manufacturers.

All our heavy panels have lumber cores, glued up from narrow strips, ¾ in. thick, of sawed lumber, poplar or chestnut, after being properly kiln dried.

Face veneers are selected by the architect and, when specified, *dry resinous Tego glue film is used throughout.* This glue has proved to be water-, weather-, and mold-proof under severest conditions and tests. Architects and builders know that balanced construction requires an equalization from the center of the panel to the outer face (see illustration below). Rieser panels are made up into every practical form and can be supplied in *bent* or *curved* planes as required. For example, in church and railroad benches, theatre seats, doors, and piano cases.

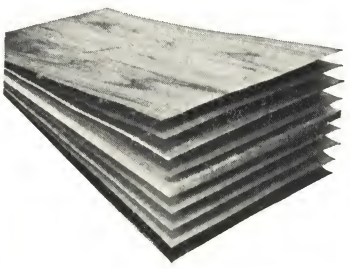
Special types of curved panels can be produced where the demand warrants to-order manufacture.

Shop Interior in Satinwood Plywood
JAFF BROTHERS WOODWORKS, Contractors

Church Interior in Quartered Oak Plywood
ARTCRAFT WOODWORKING CORP., Contractors

Room Interior in Knotty Pine Plywood
S. S. SILVER & CO., INC., Contractors

Rieser Plywoods Built to Your Specifications



Our Nine-Ply Assembly with TEGO Face Glue Film

1. Face Veneer
2. Glue Film
3. Crossband
4. Glue Film
5. Lumber Core
6. Glue Film
7. Crossband
8. Glue Film
9. Face Veneer

Office Interior in American Walnut Plywood
S. S. SILVER & CO., INC., Contractors

UNITED STATES PLYWOOD CORPORATION

Plywood—Flexwood—Armorply—Micarta—Weldwood—Laminated Products

EXECUTIVE OFFICES
616 West 46th Street
NEW YORK, N. Y.

DISTRIBUTING WAREHOUSES AND OFFICES

NEW YORK	PHILADELPHIA	ROCHESTER	DETROIT	LOS ANGELES
BOSTON	NEWARK	BROOKLYN	BALTIMORE	SAN FRANCISCO

Exhibits: 103 Park Avenue—Architects Sample Corp., 101 Park Avenue, Pedac, 30 Rockefeller Plaza

PRODUCTS

Plywood

Laminated veneers used for table tops, counter tops, fixture and cabinet work. Plywood is manufactured in any of the rare and exotic woods and is made to architectural specifications. Plywood in standard sizes is carried in stock at the warehouses listed above for immediate delivery.

Fire Resistant Plywood

Plywood with fully impregnated fire resistant cores. Asbestos board faced with veneeer and combinations of asbestos, steel and veneer constructions designed to meet city ordinances and conditions requiring highly flame-proof insulation.

Weldwood

Plywood laminated with phenolic resin under heat, producing an absolutely waterproof product. Its laminations, welded with bakelite resin, can not separate under water. The glue lines can not rot because they will not support bacterial deterioration. The wood itself is rendered practically rot-proof.

Armorply

Metal-faced plywood of great structural strength and minimum weight, having one or both sides faced with metal. Carried in stock faced with galvanneal steel. Used for truck body panelling, partitions, ship bulkheads, signs, table tops, etc. Stainless steel, copper and other metals for structural or decorative purposes manufactured on order.

Entrance Doorway of Library, Mellon Institute of Industrial Research, Pittsburgh, Pa.

JANSSEN & COCKEN, Architects — MELLON-STUART CO., General Contractors
Architectural Woodwork by GILBERT MURTAGH, INC.
Weldwood Plywood throughout manufactured by the UNITED STATES PLYWOOD CORPORATION

Micarta

Distributors East of the Mississippi for Decorative Micarta, laminated phenolic resin sheets. Used for tops, fixtures, bars, wainscoting, panels, store fronts. Micarta is furnished in sheet form or fabricated to architectural specifications. For detailed descriptions, see catalog of the Westinghouse Electric & Mfg. Company as listed in File Index.

Permanent Architectural Exhibit

In Suite No. 810 at 103 Park Avenue, New York City, the UNITED STATES PLYWOOD CORPORATION maintains a permanent exhibit of Plywood, Flexwood and Laminated Products. Here will be found more than 150 different woods, finished and unfinished. Architects, owners, decorators and contractors are cordially invited to visit this display and avail themselves of its complete facilities.

Flexwood

EXOTIC WOODS IN FACILE FORM

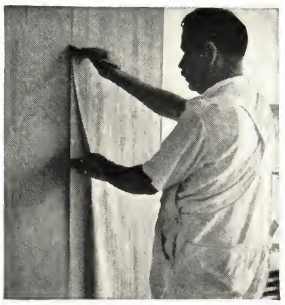
Reg. U. S. Pat. Off. Patent No. 1819775

Address Correspondence on Flexwood to 103 Park Avenue, New York, N. Y.

· *Flexwood* is genuine wood veneer cut to 1/85 of an inch, glued under heat and hydraulic pressure to cotton sheeting with a waterproof adhesive. A patented flexing operation alters the cellular unity of the wood to produce a limp, pliable sheet which may be applied by hand to any smooth surface, flat or curved. Waterproof Flexwood cement, which makes a permanent bond, is used to apply Flexwood. Standard sizes of stock material are 18-in. and 24-in. widths and 8-ft. and 10-ft. lengths.

Dry plaster, steel, Fir Plywood, hard wallboards, tile, marble, asbestos, glass, etc., make perfect backgrounds for Flexwood treatment. Sheets may be hung horizontally or vertically for modern sheer wall treatments or for Georgian or classical panel designs. Inlays and murals are produced by combining various woods.

Columns, round or square, can be completely wrapped with Flexwood. Sharp corners and fluted pilasters are treated as easily as plane surfaces.



Mechanics of installation are simple. The background is sized with Flexwood cement. Another coating of cement is brushed on the Flexwood which is then hung in the manner of any sheet wall covering. A stiff broadknife, used with considerable pressure, smooths out the Flexwood, removes air spaces and furnishes the necessary contact. Any skilled paperhanger can do a perfect job by following printed instructions.

Flexwood, because it is wood, takes any wood finish.

Flexwood in the hands of the designer is a tool as essential as metal, paint or glass for creating modern effects. Its uses are limited only by the ingenuity of the designer.

The Definite Economy of Flexwood interiors is particularly emphasized in sheer wall treatment and when it is used in buildings governed by city fire ordinances.

Rare and Exotic Woods from all corners of the earth are available in Flexwood, making it possible to create and execute distinctive interiors in from 25% to 50% of the time normally required. Wood selections can be made from actual flitch samples. Distributors are located in sixty principal cities.

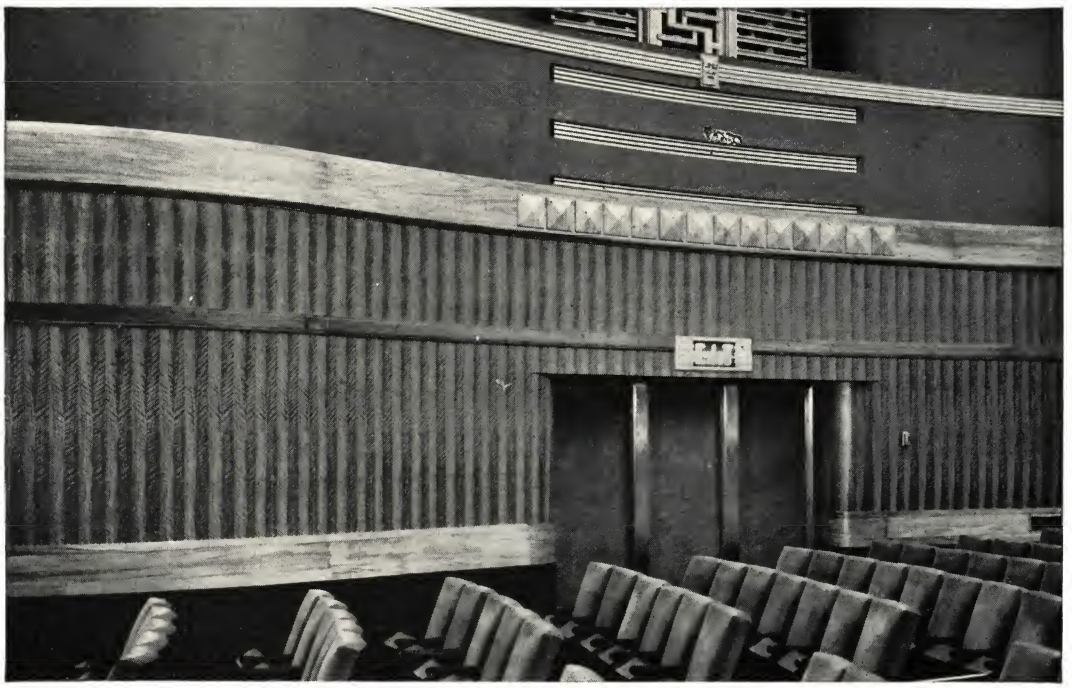
Some of the woods available in Flexwood are:

Mahogany	Satinwood	English Oak	African Cherry
Walnut	Zebrawood	Maple	Swiss Pearwood
Oak	Harewood	Avodire	Burma Teak
Prima Vera	Macassar Ebony	Lacewood	Araca
Knotty Pine	Redwood Burl	Claro Walnut	Bubinga
Orientalwood	Rosewood	Aspen	Sapeli

Flexwood meets every decorative requirement in the field of homes, offices and institutions. When the luxury obtainable only with genuine wood treatment is desired and economy and time are imperative, Flexwood is the answer.

Permanent exhibits maintained at Architects Samples Corp., 101 Park Ave., and Pedac, 30 Rockefeller Plaza, N. Y. C.

Manufactured and marketed jointly by The Mengel Co. of Louisville, Ky., and the United States Plywood Corporation.

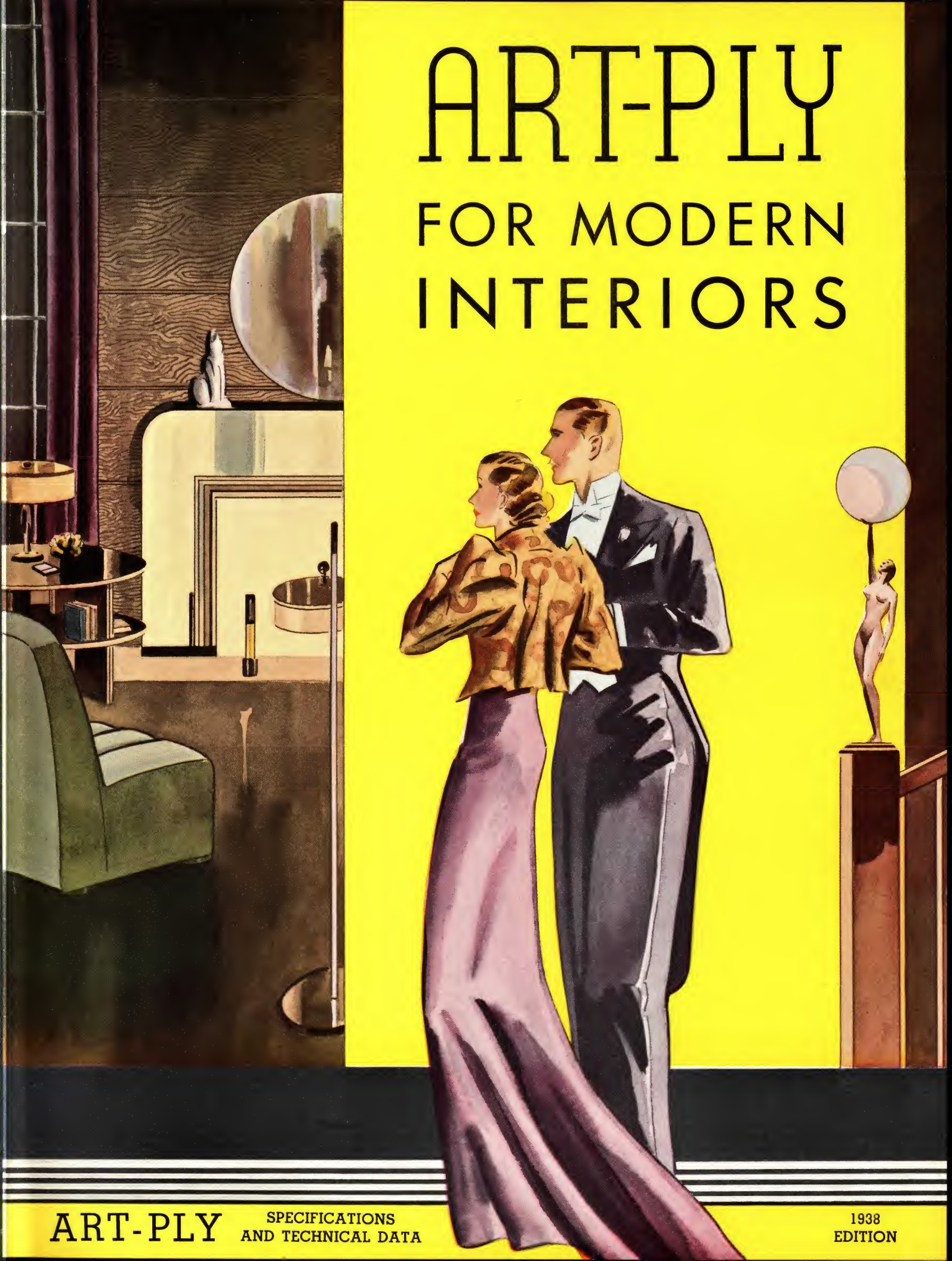


Figured Quartered Walnut Flexwood in the Music Hall of the Kansas City Municipal Auditorium
Alonzo H. Gentry, Voskamp & Neville, Architects

MEMORANDA

ART-PLY

FOR MODERN INTERIORS



ART-PLY SPECIFICATIONS AND TECHNICAL DATA

1938 EDITION

VANCOUVER PLYWOOD & VENEER CO.

EXCLUSIVE MANUFACTURERS OF ART-PLY (Inlaid Fir Plywood) and VAN-PLY (Standard Fir Plywood)

VANCOUVER, WASHINGTON, U. S. A.

Patents Pending

ART-PLY

THE INLAID PLYWOOD

Trade-Mark Registered

ART-PLY FACTORY REPRESENTATIVES

Chicago Illinois: 340 West Harrison, Mr. P. H. Holliday.

Detroit, Mich.: 746 New Center Bldg., C. J. Ashton Company.

Houston, Texas: 538 West 21st Street, Mr. R. C. Frederick.

Los Angeles, California: 423 Petroleum Securities Building, Mr. G. C. Phillips.

New York City: 220 East 42nd Street, Mr. G. Freeman Tibbetts.

St. Louis, Mo.: 6222 Nottingham Ave., Mr. S. W. Cornell.

No more battens or visible joints . . . ART-PLY does away with this former objection to plywood

YOU CAN'T TELL WHERE THE PANELS JOIN!

A long sought goal has been achieved. A manufacturing method has been developed which abolishes forever those unsightly battens which have heretofore been used in an attempt to hide the unsightly joint. This new paneling . . . named ART-PLY, is "self-joining" . . . uses its own pattern to cover and seal joints; making them invisible.

ART-PLY is very ingeniously manufactured with a neat narrow moulding (flush with the surface) which not only makes indistinguishable all joints but breaks up an otherwise plain surface into attractive, decorative panels.

ART-PLY is **all** wood; made from 3-Ply Durable Douglas Fir; welded together.

ART-PLY offers a new, modern interior mode for homes, studios, offices or public buildings. For remodeling it has no rival. It will go over old unsightly walls and ceilings, and can be easily and quickly finished without delays, and affords **dry** construction.

ART-PLY is manufactured in four standard patterns; in standard 4 x 8 ft. sections. The edges are rabbeted and mouldings for joints, brads and complete installation instructions are furnished with each package of ten 4 x 8 panels.

ART-PLY has great tensile strength; will not crack, bulge, sag, or crumple. Installation is simple and low in cost. Stain it, paint it, enamel it; or stencil it . . . ART-PLY will take any finish wood will take.

RANDOM PLANK
(No. RP-10) Size 4 ft. x 8 ft. Sections
16-8-14-10 Inch Planks
Two Edges Rabbeted

ART-PLY panels are redried to low moisture content which assures a smoothly sanded surface and beautiful finish.

ART-PLY is manufactured by one of the oldest and best equipped plywood plants of the Pacific Northwest. Panels are preserved by careful wrapping. Every panel is carefully inspected before it is wrapped for shipment. Each is examined for defects and moisture content. Only the finest and most perfect old growth yellow Douglas Fir is used in making ART-PLY. The mouldings made from the same wood receive special attention, harmonizing and matching perfectly, regardless of how placed, and are manufactured with specially designed machines in our own plant. Mouldings are cemented in place with casein glue which "welds" them permanently, making them an indestructible part of the panel surface.

Each package contains 10, 4x8 ft. panels and 12 extra pieces of mouldings for joints (two extra for good measure), a generous supply of brads for fastening, and installation and finishing specifications.

ART-PLY, if nailed well to the studs, furring strips or backing, will never warp or bulge, and will afford practically an indestructible surface for any room.

Manufactured Exclusively by

VANCOUVER PLYWOOD & VENEER COMPANY

VANCOUVER, WASHINGTON, U. S. A.

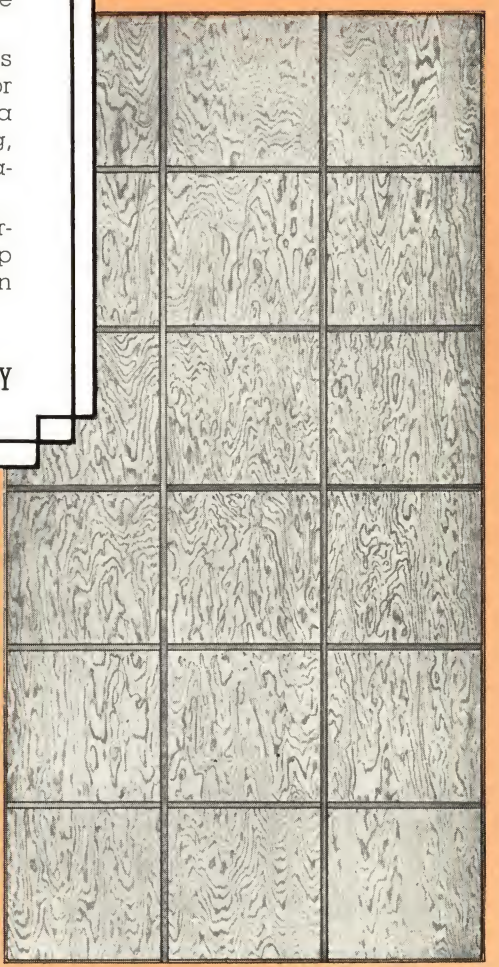
STANDARD PLANK
(No. SP-20) Size 4 ft. x 8 ft. Sections
16 Inch Planks
Two Edges Rabbeted

(Left)

← RECTANGULAR TILE
(No. RT-30)
Size 4 ft. x 8 ft. Sections
16" x 32" Rectangles
All Edges Rabbeted

(Right)

SQUARE TILE →
(No. ST-40)
Size 4 ft. x 8 ft. Sections
16" x 16" Squares
All Edges Rabbeted



The Designer calls it his room of modern

Inspiration

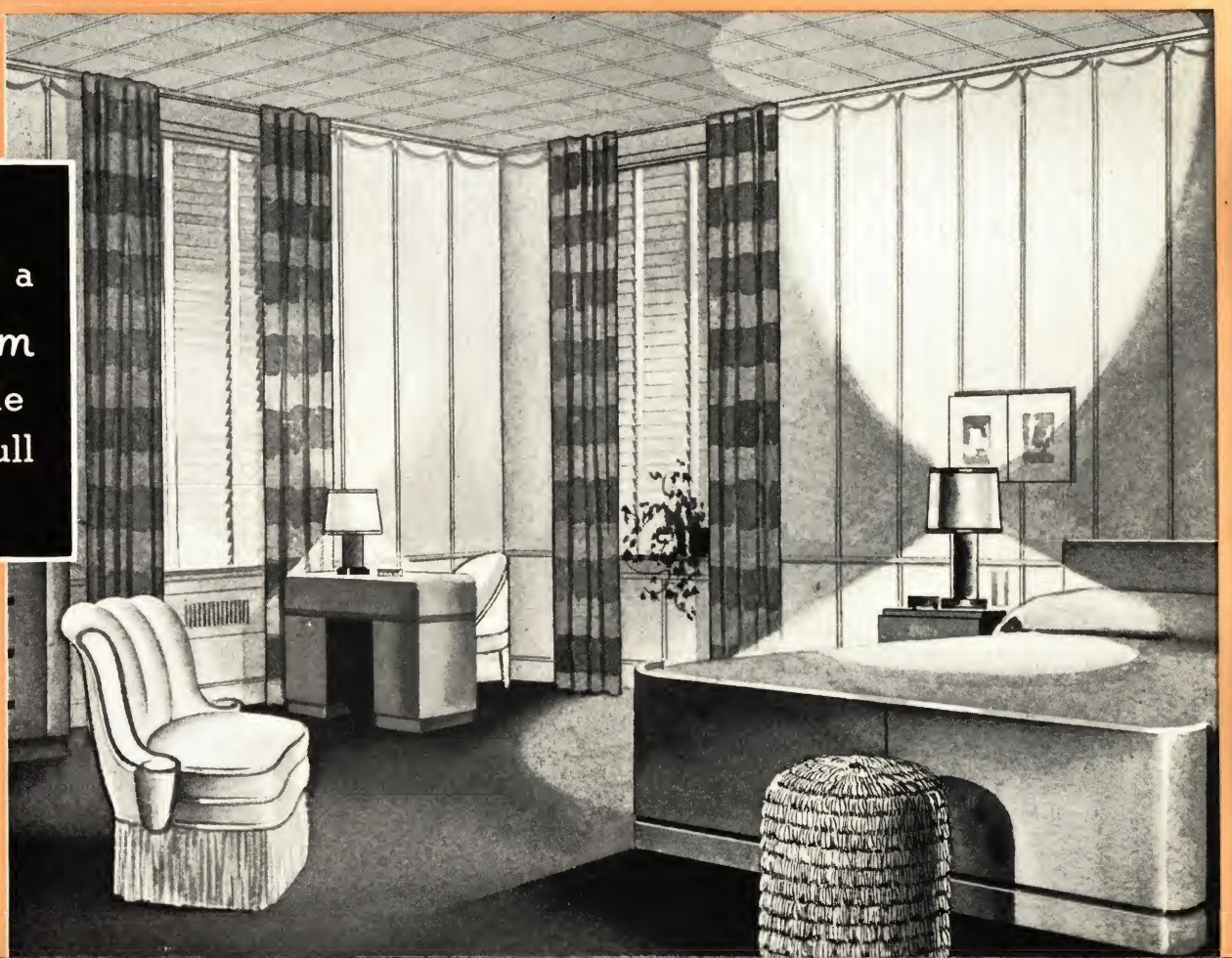
A very practical design when done with ART-PLY

The semi-horizontal walls in the drawing room or living room shown above are constructed with Art-Ply Rectangular Tile (RT-30). This gives an effect of the popular horizontal mouldings without modernistic extremes. Can be finished to suit color scheme of room. The frieze over windows is very effective.

Can you conceive of a

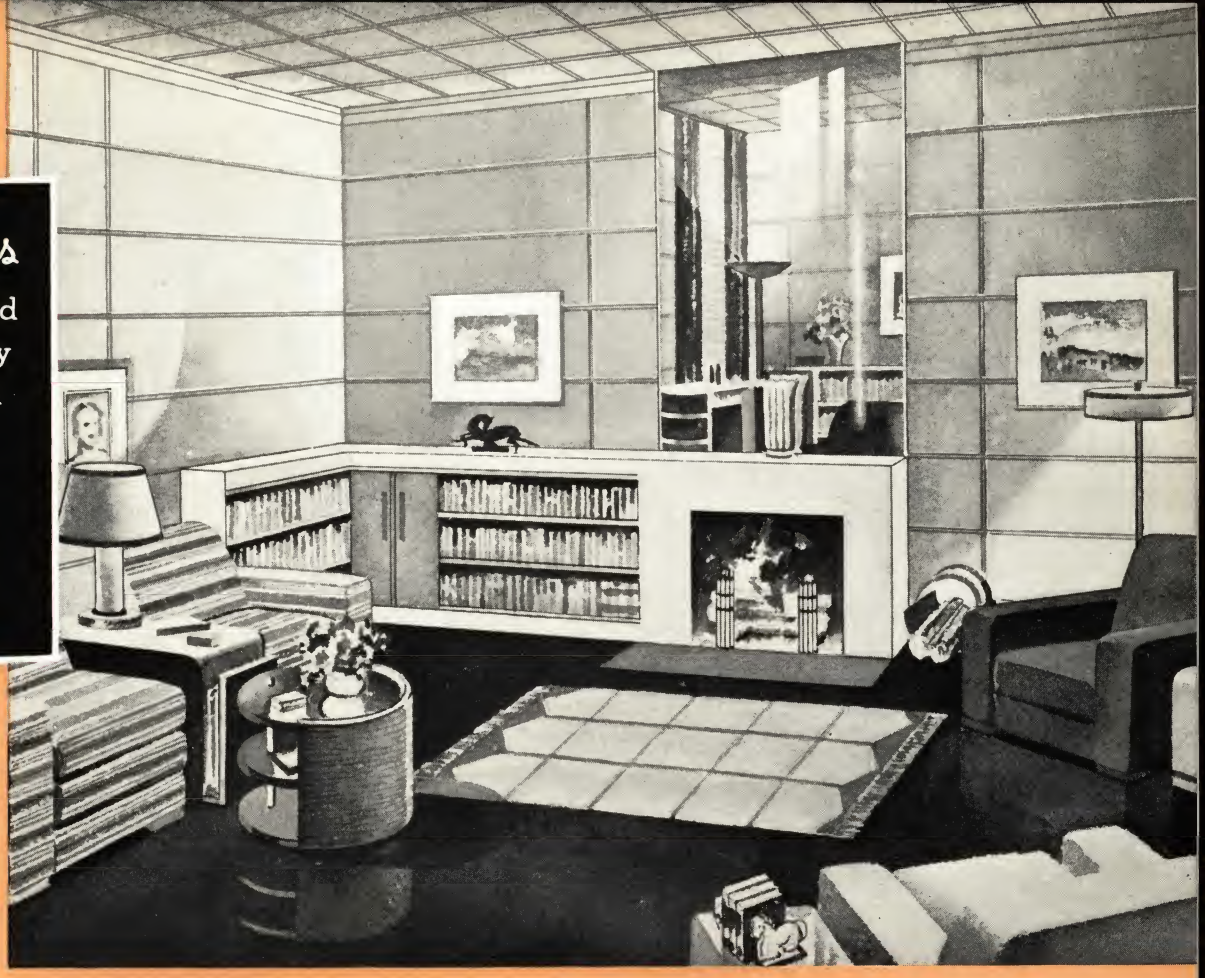
Bed Room

more simple and yet so full of charm



Walls in this beautiful bedroom are of Art-Ply Standard Plank (SP-20). The ceiling is Art-Ply Square Tile (ST-40). A scalloped moulding adds just enough daintiness.

Smartness is so easily and inexpensively attained with ART-PLY in the *Living Room*



This attractive library has Art-Ply Square Tile (ST-40) for the ceiling. The walls are constructed by running Art-Ply Standard Plank (SP-20) horizontally around the wall and joining the sections with strips of Art-Ply Square Tile (ST-40). Strips are made by sawing sections into three 8 ft. strips.

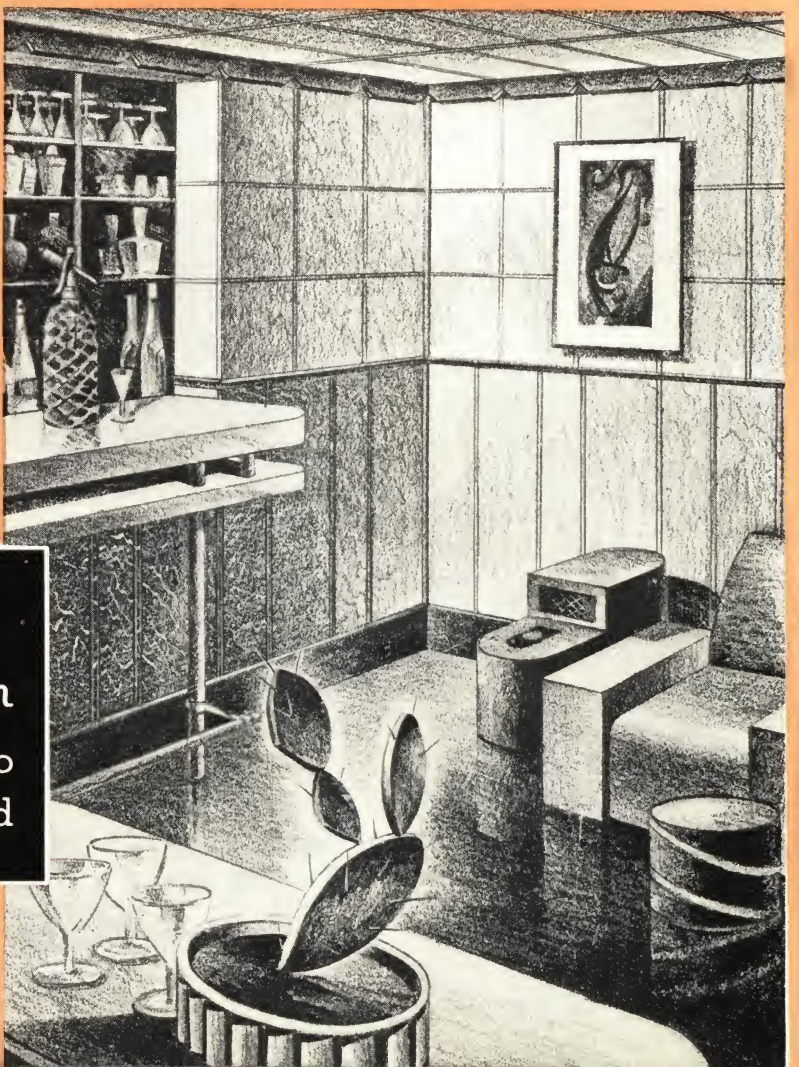
Enrich your home with a *Dining Room* paneled with ART-PLY

From the floor start with wainscoting of Art-Ply Rectangular Tile (RT-30); above chair rail use Art-Ply Standard Plank (SP-20); above, run strips sawed from Rectangular Tile. Decorate with stencil.

Home or Town Office

If you want something smart but inexpensive

Art-Ply Random Plank (RP-10) is used for wainscoting; Rectangular Tile (RT-30) above; ceiling in Square Tile (ST-40). Finish in any tint or shade and let grain show through.



Basement Recreation Room

Smart, durable and so quickly constructed

What could be better for the party room than durable Art-Ply? Random Plank, Square Tile and Rectangular Tile are used for this room.

If you could only see this beautiful

Breakfast Room

in its lovely pastel colors

You should see this attractive breakfast room in color. Wainscoting is Art-Ply Rectangular Tile (RT-30); cream enamel. Above is chalk blue Random Plank (RP-10). Ceiling is Square Tile, finished in cream to match wainscoting.

Kitchen

in prize winning home

First Prize in "National Better Home Contest" of Better Homes and Gardens

Random Plank (RP-10) is used for walls; Rectangular Tile (RT-30) on ceiling. Kitchen finished in rose enamel, completely covering grain.

Description and Specifications for ART-PLY

SIZE OF PANELS AND PACKAGING

ART-PLY is manufactured from durable Douglas Fir, in panels of standard size: 48 inches x 96 inches; 3-ply, ¼ inch thickness. Each package contains 10 panels; extra moulding for all joints; envelope of 1" brads, and specifications for applying and painting. All wrapped in Manila, and labeled.

PHYSICAL CHARACTERISTICS

The basic construction of ART-PLY is the same as that of the best Douglas Fir Plywood. The veneers are rotary cut from the finest Douglas Fir available. The mouldings are made from old growth Fir and welded in so expertly with casein glue that the high tensile strength of these laminated panels is preserved. All ART-PLY panels are scientifically redried, bringing the shipping moisture content down to approximately 10%. ART-PLY is extra warp-resistant; light in weight; and has a thermal conductivity of only 3.12. When used for an ordinary conventional frame wall with siding, building paper, sheathing and an interior wall lining, the conductance is only .250. Infiltration of air is less when ART-PLY is used than with practically any other wall materials, all ART-PLY joints being sealed with inlaid mouldings.

REPRESENTATIVE USES

ART-PLY is a decorative wall material in four standard patterns, and can be used for any room in the house. In comparison to plaster, ART-PLY is less expensive, less troublesome and far more lasting. Weeks are saved in construction time and the house is free from the tons of moisture required in plastering. For remodeling, ART-PLY is unexcelled. It will go readily over old plaster and papered walls. ART-PLY is popular in business office construction, and where the ceilings are of some good sound-absorbent material. ART-PLY gives ample acoustical quality along with indestructible walls.

PRICES

ART-PLY costs less than plaster, and is comparable in price with other wallboard on the market . . . in all cases, less in price when construction time and durability are considered.

For Test Data on ART-PLY see "Facts About Douglas Fir Plywood" in the Wallboard Section of SWEETS.

How to Apply ART-PLY

Like any ordinary Douglas Fir Plywood, ART-PLY can be nailed directly to the face of the studs. In new construction, they are usually 16 inches, or 24 inches on center. In either instance, headers, or cross members, should be inserted between the studs approximately three feet apart, as well as at the top and the bottom of the studs. Where a dado, or wainscot is desired, a header must be placed to form a base for the ART-PLY joint, as well as for the chair rail moulding.

ART-PLY also can be applied over furring strips or any solid wood backing. When furring strips are used, these should be so spaced that the rabbeted edges and ends of all ART-PLY panels have a solid even foundation, thus affording a permanent nailing base for both the panels and the small joint mouldings which are to be glued and bradded into place after the panels are installed.

NAILING:

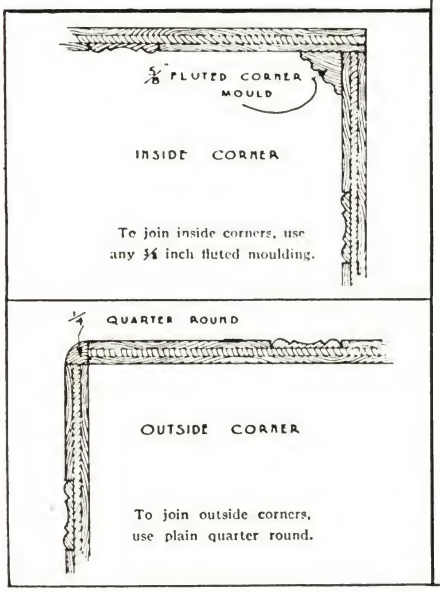
Four penny finishing nails should be used, spaced eight inches apart, and nailed through the rabbeted edge to the studs or base material. The small mouldings which cover all joints should be bradded with a very small gage 1" brad (these come in all packages of ART-PLY) after the moulding has been glued in place. In addition to nailing the rabbeted edges, the faces of the panels should be nailed to the intermediate studs or furring strips with four penny finishing nails every two feet, countersinking all nail heads.

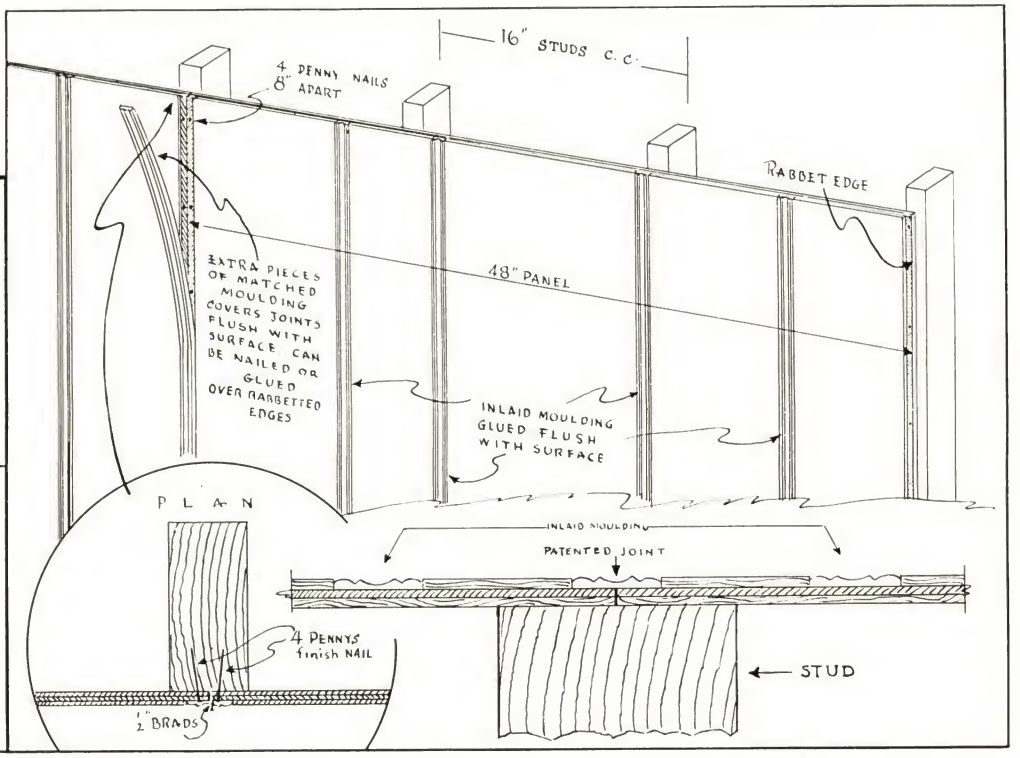
TRIM:

Baseboard, cornices, door jambs, or window casings can be laid over ART-PLY because mouldings on ART-PLY are even with the surface at the joints as well as on the face. There is no problem of protruding battens.

CEILING INSTALLATIONS

When using ART-PLY tile patterns for ceilings, the application should begin in the center of the room. Measure the width and the length of the room, and locate the center point on the ceiling. The first panel should be centered over this point. This will insure a balanced appearance, as the spacing of the moulding will be the same when the four outer edges of the ceiling are reached. In the majority of cases, it will be found that the joists will not conform to this idea. Thus it is necessary to install furring strips or a solid backing over the joists. Furring strips should be nailed across the joists in conformity with the ends and sides of the first panel, about two feet apart. Be sure that the ends of each panel have adequate nailing base. This specification is used with practically all designed ceiling applications regardless of material.





CORNER CONSTRUCTION

Finish inside corners (where the walls butt together at right angles) by applying a quarter-round or fluted moulding from baseboard to ceiling. Finish outside corners (where the walls butt together at right angles) with a quarter-inch, quarter-round along the **outside** edge of the corner from baseboard to ceiling. This conforms to the thickness of the ART-PLY, and makes a completely sealed joint.

REMODELING WORK

ART-PLY can be applied over old plastered walls and ceilings. First remove all loose plaster. When furring strips are to be applied, be sure that strips are so spaced that all edges of the ART-PLY section come directly over the strips, thus giving a firm backing to all joints. Ordinary ¼ plywood can be ripped and used as furring strips.

BACK PRIMING

Experience has shown that it is necessary to prime the back of all panels with boiled linseed oil or other good primer before putting in place. In confined wall areas, condensation at some time is bound to occur, and by priming this is insurance against moisture absorption.

INSULATION OR AIR CONDITIONING

In inside wall construction, ART-PLY usually has sufficient insulation efficiency without being backed up with other insulation material. And inasmuch as 60 to 65 per cent of the preventable heat loss is through the ceiling, sufficient insulation for all practical purposes can be achieved by using either an accepted blanket insulation or a fill for the ceiling only. Where the latter is used, ART-PLY is ideal because the fill cannot sift through.

ART-PLY, unlike most wall materials, can be finished in unlimited variations

Stain it, paint it, enamel it, stipple it . . .
ART-PLY takes any finish wood will take

ART-PLY can be finished in an almost unlimited number of ways. Its natural wood grain lends itself to a variety of stain finishes. Being a wood surface, it will take all the variations of surfacing possible with wood, the natural base for paint. Finishes can be further varied with stains, enamels, and sand etchings. We could devote many pages to present the hundreds of possible finishes for ART-PLY, but space here will not permit. We offer a few basic methods. For further information we suggest you consult a good painter.

In Every Instance the PANELS MUST BE SEALED

Art-Ply in interiors should be given at least 3 coats of paint mixed according to following formulas:

	Priming Coat	Second Coat		Flat Finishing Coat		Semi-Gloss Finishing Coat	
		A*	B*	A*	B*	A*	B*
All Purpose Soft Paste White Lead	100 lb.	100 lb.	100 lb.	100 lb.	100 lb.	100 lb.	100 lb.
Raw Linseed Oil	3 gal.						
Turpentine	2¼ gal.	1¼ gal.		1¾ gal.		¾ gal.	
Flatting Oil, Lead Mixing Oil or Lead Reducing Oil			2½ gal.		2½ gal.		2 gal.
Floor Varnish		¾ gal.		1 pt.		1¼ gal.	1 gal.
Liquid Drier	1 pt.	½ pt.		½ pt.		½ pt.	
Gallons of Paint	8½	5¼	5½	5	5½	5¼	6
Coverage per Gallon (approximate) Sq. Ft.	700	800	800	800	800	800	800

*Either formula A or B may be used in each case, depending upon availability of materials and personal preference of the decorator. The above formulas may be tinted any color to suit.

FOR AN ENAMEL FINISH, high grade prepared enamel shall be applied as the finish coat over the above priming and second coat.

Stipple Finish

1. **Priming Coat**
   100 lbs. pure white lead . . . 2.78 gals.
   4 gals. pure boiled linseed . 4. gals.
   2 gals. pure turpentine . . . . 2. gals.
   8.78 gals.
   (Coverage approx. 350 sq. ft. per gal.)
2. **Second Coat**
   Equal parts: Pigment wall seal and semi-gloss. (Coverage approximately 350 sq. ft. per gal.)
3. **Third Coat**
   Stippling paste. According to directions on container. Over-glaze if desire color.

Stain Finish

1. **Priming Coat**
   One coat oil stain.
2. **Second Coat**
   One coat shellac. When dry, sand lightly with No. 00 sandpaper.
3. **Finishing Coat**
   (a) Gloss finish: Two coats varnish, sanding and allowing ample time between coats.
   (b) Dull finish: Apply two coats dull varnish.
   (c) Wax finish: Two coats polishing wax. Last coat rubbed and polished with polishing cloth.

Flat Finish

1. **Priming Coat**
   100 lbs. pure white lead . . . 2.78 gals.
   4 gals. pure boiled linseed . 4. gals.
   2 gals. pure turpentine . . . . 2. gals.
   8.78 gals.
   (Coverage approx. 350 sq. ft. per gal.)
2. **Second Coat**
   Equal parts: Pigment wall seal and good washable wall finish in white or color.
3. **Third Coat**
   Washable wall finish.

Allow ample time between coats. Sand lightly between coats with No. 00 sandpaper.

ART-PLY can be finished with any standard prepared paint. But in every instance the wood MUST first be sealed with any standard wood sealer procured at local paint dealer.

SPECIFICATIONS FOR FINISHING PANELS

(SHOWN ON BACK COVER IN COLOR)

SHADED CHARTREUSE

Apply Pigment Stain* (Japan); Sand with 5-0 Finishing paper; Flute mouldings; Shade♦; Highlight with steel wool; Cover with semi-gloss varnish or lacquer; Use steel wool; and then Wax.

***MIXTURE FOR PIGMENT STAIN**

Light Ivory

Use touches of Chrome Green, Chrome Green light, Empire Blue, Raw Sienna, Chrome Yellow (medium), and Burnt Umber.

♦MIXTURE FOR SHADING STAIN . LACQUER

Black

Use touches of Green, Raw Sienna, Burnt Umber, Ivory; Thin out with lacquer thinner.

SHADED BLONDE

Apply Pigment Stain* (Japan); Sand with 5-0 Finishing paper; cut in mouldings; flute mouldings; Line; Shade♦; Highlight with steel wool; Cover with semi-gloss varnish or lacquer; use steel wool, and Wax.

***MIXTURE FOR PIGMENT STAIN**

White

Use touch of Raw Sienna, touch of Red, touch of Burnt Umber, touch of Green, and touch of Yellow.

♦MIXTURE FOR SHADING STAIN . LACQUER

Use Burnt Umber, Raw Sienna, a touch of Black and thin out with Lacquer thinner.

DRIFTWOOD TREND

Apply Pigment Stain*; Sand with 5-0 Finishing paper; Cut in mouldings; Flute mouldings, Decorate; Shade♦; Highlight with steel wool; Cover with semi-gloss Varnish or Lacquer; Use steel wool, and then Wax.

***MIXTURE FOR PIGMENT STAIN**

Ivory

Use touch of Black, touch of Blue, touch of Green (medium), touch of Raw Sienna.

♦MIXTURE FOR SHADING STAIN

Use Black, Blue, Burnt Umber, touch of Raw Sienna, and thin out with Lacquer thinner.

ROSE GREY

Apply Pigment Stain*; Sand with 5-0 Finishing paper; Cut in mouldings; Decorate; Shade♦; Highlight with steel wool; Cover with semi-gloss Varnish or Lacquer; Use steel wool, and then Wax.

***MIXTURE FOR PIGMENT STAIN**

Light Ivory

Use touch of Raw Sienna, touch of Red, touch of Burnt Umber, touch of Black.

♦MIXTURE FOR SHADING STAIN

Use Black, Burnt Umber, Raw Sienna, and thin out with lacquer thinner.

ANTIQUED STIPPLE

Stipple with Light Ivory Lacquer semigloss and heavy material; Give light sanding and cut in, then flute mouldings; Glaze* then wipe; Then apply Two-Tone shade♦; Highlight with steel wool; Apply deep gold stripe; Cover with semi-gloss varnish or lacquer. Use steel wool lightly, then Wax.

***MIXTURE FOR GLAZE**

Use Burnt Umber, Raw Sienna, touch of Black, touch of Ivory. Thin out with turpentine; add Japan Dryer.

♦MIXTURE FOR TWO-TONE SHADE

Use Burnt Umber, touch of Black, touch of Raw Sienna, and thin out with lacquer thinner.

MODERN OFF-WHITE

Apply pigment stain (Off White); Sand with 5-0 Finishing paper; Apply Two-Tone Border*; Stripe; Flute mouldings; Shade♦; Highlight with steel wool; Cover with semi-gloss varnish or lacquer; Use steel wool, then wax.

***MIXTURE FOR TWO-TONE**

Use White, Empire Blue, touch of Green and touch of Raw Sienna.

♦MIXTURE FOR SHADING STAIN

Use Black, Blue, touch of Burnt Umber, and touch of Raw Sienna; thin out with lacquer thinner.

EARLY AMERICAN

Apply pigment stain*; Sand with 5-0 Finishing paper; Flute mouldings; Decorate; touch up stain; shade♦; Highlight with steel wool; Cover with semigloss Varnish or Lacquer; Use steel wool, and then Wax.

***MIXTURE FOR PIGMENT STAIN**

Use Raw Sienna, Burnt Umber, touch of Red, touch of Green and a touch of Ivory.

♦MIXTURE FOR SHADING STAIN

Use Burnt Umber, Raw Sienna, touch of Black, touch of Red, and thin out with Lacquer Thinner.

Shaded Charteuse*
ART-PLY
STANDARD PLANK

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Shaded Blonde*
ART-PLY
RANDOM PLANK

Driftwood Trend*
ART-PLY
RANDOM PLANK

Rose Gray*
ART-PLY
RANDOM PLANK

Antiqued Stipple*
ART-PLY
RANDOM PLANK

Modern Off-White*
ART-PLY
STANDARD PLANK

Early American*
ART-PLY
STANDARD PLANK

★ SEE OTHER SIDE OF THIS SHEET FOR FINISHING SPECIFICATIONS . . . . . .

THE RESINOUS PRODUCTS & CHEMICAL CO., INC.

222 W. Washington Square, PHILADELPHIA, PA.

Makers of Tego Film for Weatherproof, Structural

TEGO-BONDED

PLYWOOD

Nature of Material

Tego-bonded plywood is characterized by the use of a synthetic resin film laid between sheets of dry veneer and set in a hot press with controlled heat, pressure and time. This process fuses the Tego into the adjacent wood layers, resulting in indestructible plywood panels of extraordinary strength and extreme durability. Plywood is much lighter than solid wood of the same strength. The alternate cross laid sheets distribute the plywood strength and overcome normal wood weaknesses.

Schwartz Restaurant, New York, N. Y.
With Tego-bonded paneling by U. S. Plywood Co.

Properties and Working Characteristics

The Tego film bond is entirely insoluble in cold or boiling water, chemically inert, repellant to fungi and insect pests, and retards decay. Its waterproof quality has greatly widened the field in which plywood is advantageously used. It is stronger than the wood itself and meets the rigid requirements of U. S. Army and Navy specifications. Tego plywood works as easily as ordinary wood and may be made and used in flat or curved shapes. May be combined with metal, asbestos, insulating boards, and the like. Especially adapted to fine finishes.

Gunnison House of Tego Plywood, Louisville, Ky.
This house stood in flood waters (1937) and was entirely sound afterward

Uses of Tego-bonded Plywood

Structural—Concrete forms, fixed enclosures and movable partitions, sheathing, flooring, roofing, ceilings and prefabricated units.

Industrial—Bins, chutes, conveyors, cabinets, lockers, signs, foundry patterns, electrical equipment, etc.

Decorative—Store fronts, elevator cab linings, paneling, counter fronts, furniture, radio cabinets, musical instruments and trays.

Transportation—Aircraft, ships and boats, auto trucks and trailers, busses and railroad cars.

Sizes, Grades and Specifications

Obtainable in a wide range of grades, constructions and sizes, from 3-ply 1/32 in. to multiple ply 7/8 in. and thicker. Standard stock sizes available up to 48x96 in. and special custom sizes to 84x144 in. Face grain runs lengthwise, except where otherwise specified.

Suggested Specifications — .... inch (*thickness*), ...-ply.... (*species*) plywood of.... (*grade*), for.... (*use*). All plywood to be dry bonded with Tego resin film under heat and pressure.

For sources of local supply or technical data, write direct to address above.

AMERICAN WOOD COLUMN COMPANY

EASTERN DISTRIBUTOR FOR

SOMERSET DOOR AND COLUMN CO., SOMERSET, PA.

TELEPHONE
STagg 2-3163

903 Grand Street, BROOKLYN, N. Y.

Products

"NEVER GIVE" PATENTED LOCK JOINT WOOD STAVE COLUMNS for exterior and interior use.

Also Pilasters and Balusters to match "Never Give" Columns, and Cast Iron Plinths.

Architectural Service

Somerset specializes in building wood columns to the architect's details and can supply any size or design wanted, or, if no specific design is indicated, will prepare one in accordance with the best architectural practice and for any period, and submit full sized detail for approval.

Selected stock designs conform to the standards of Vignola and include lock joint turned columns, plain or fluted, and square columns, plain, fluted or paneled. Somerset is particularly well equipped to supply fluted columns.

"NEVER GIVE" LOCK JOINT

TRADE-MARK

"NEVER GIVE" PATENTED LOCK JOINT COLUMNS

Construction

"Never Give" Patented Lock Joint Column staves are held tightly together by a counter-beveled spline of hardwood, machine-driven through the length of the column, using a sufficient quantity of waterproof glue to secure it completely. No metal bands are required to hold the staves together with such construction, and an unconditional guarantee is given that "Never Give" Columns will not fail by opening at the joints.

Proportions

"Never Give" Columns are architecturally correct, having proper entasis, stopped flutes and other characteristics of the columns of ancient classical orders.

Unless otherwise specified, the staves are worked to the correct entasis (convex curve) in the rough before being placed in the columns (one-third straight and upper two-thirds swell tapered.)

This method not only gives proper entasis when columns are turned and finished, but also insures maximum thickness of stock throughout entire length.

Materials

"Never Give" Columns are regularly made of white pine or redwood, only best grade material being used, but columns will be made of any wood desired. All lumber is kiln dried and tested for moisture content before use in manufacture. The wood should be specified from which columns are to be made.

Information Required for Estimates

In asking for estimates, indicate the number of columns and design wanted, the kind of wood, the largest and smallest diameters of round columns or widths of square columns, the over-all lengths, whether the shafts are to be plain, fluted or paneled, and whether the columns are for exterior or interior use.

State the name of the surface on which the column is to rest, whether priming of the wood before shipment is required, and whether the cove of the columns is to be part of the shaft or may be planted on. Also give the thickness of shaft desired.

Specifications

In specifying, it should be clearly stated that all columns are to be "Never Give" Lock Joint construction, using hardwood spline and waterproof glue, as sold by the AMERICAN WOOD COLUMN COMPANY, 903 Grand Street, Brooklyn, New York.

The information required for estimates as set down above should also be supplied.

No. 115
Plain Column, Doric Cap, Attic Base

No. 135
Fluted Column, Scamozzi Cap, Attic Base

A Sample of the "Never Give" Patented Lock Joint may be had on application.

A List of Prominent Installations

Bibb Graves Hall, State Normal, Troy, Ala.
Warren, Knight and Davis, Architects

Connecticut College, New London, Conn.
E. R. Loud, Architect

Iowa State College, Women's Dormitory, Ames, Iowa
Proudfoot, Pawson, Souers & Thomas, Architects

Memorial Hall, University of Kentucky, Lexington, Ky.
Warner, McCormick & Mitchell, Architects

Springfield State Hospital, Sykesville, Md.
Henry Hopkins, Architect

Holyoke Savings Bank, Holyoke, Mass.
Hutchins & French, Architects

Knoll Golf Club, Boonton, N. J.
Walker & Gillette, Architects

Glen Oaks Golf and Country Club, Great Neck, L. I., N. Y.
Buchman & Kahn, Architects

U. S. Veterans Bureau Hospital, Portland, Ore.
Government Architect

U. S. Veterans Hospital, Coatesville, Pa.
U. S. Veterans Bureau's Architect

Ocean Forest Hotel, Myrtle Beach, S. C.
Johnson & Brannan, Architects

Virginia Episcopal Theological Seminary Dormitory, Alexandria, Va.
Frederick H. Brooke, Architect

Building for Food Administration and Council of National Defence,
Waddy B. Wood, Architect

Physical Education and Science Building for Board of Education, Fairmont, W. Va.
L. D. Schmidt, Architect

A. F. SCHWERD MANUFACTURING CO.

Manufacturers of Wood Staved Columns

PITTSBURGH, PA.

"Schwerd's Quality Columns"

The A. F. Schwerd Manufacturing Co. has for many years been contributing to the architecture of this country wooden columns that are not only correct artistically, but scientifically as well. Many of these columns, installed in buildings a quarter of a century ago, are in as good condition as when they left our factory.

Our painstaking attention to detail in the manufacture of these columns has made the name "Schwerd's Quality Columns" known throughout the building industry.

Service to Architects

During our years of experience in co-operating with architects on the highest class of work for all types of buildings we have developed a complete line of standard columns and pilasters. These designs are in accordance with best practice and are illustrated and described in our latest catalogue. Copy will be sent on request.

Where the architect wishes to use his own design we can offer complete facilities for production and service and welcome an opportunity to co-operate in any way.

Entrance to H. J. Heinz Co. Pier, Atlantic City, N. J.
R. Maurice Trimble, Architect, Pittsburgh, Pa.

Reasons for the Durability of "Schwerd's Quality Columns"

If a column were made of steel, it would be possible to so fashion joints of the staves that they would rigidly interlock without any other attachment. In the past, attempts have been made to apply this same principle to wooden columns but it has not been successful, because the strength of wood is not sufficient to withstand the necessary tension on interlocking members.

In every test, whether for demonstration purposes or in actual service, the strength of a wood column will be found to be that of the glue in the joints.

Realizing this, the gluing of the Schwerd Column is made a matter of utmost importance. Glue used is the strongest, most permanent glue obtainable. Schwerd millwork is done with such accuracy that the gluing surfaces meet absolutely flush at every joint. Tremendous pressure is applied to the freshly glued columns so that every particle of glue is either forced into the wood or from the joint.

The result of Schwerd gluing is a joint that is actually stronger than the solid wood, a column that will endure until the building of which it is a part is ready to be demolished.

Composition caps can be furnished in any style desired.

A FEW REPRESENTATIVE BUILDINGS USING "SCHWERD'S QUALITY COLUMNS"

Building	Location	Specification		Architect or Millwork Contractor
Haddon Fortnightly Club	Haddonfield, N. J.	4 No. 120	50″ x 28′	Ellery K. Taylor
Harvard University "School of Business"	Cambridge, Mass.	6 Detail	48″ x 40′	McKim, Mead & White
Harvard University "Langdell Hall"	Cambridge, Mass.	16 Detail	44″ x 22′	Coolidge, Shepley, Bullfinch & Abbott
Mercersburg Academy	Mercersburg, Pa.	8 Detail	44″ x 26′	Day & Klauder
Masonic Temple	Lock Haven, Pa.	2 Detail	42″ x 32′	Sterns & Woodnutt
White Sulphur Springs Hotel	White Sulphur, W. Va.	10 Detail	40″ x 36′	Philip Small, Inc.
Peace Institute	Raleigh, N. C.	4 Detail	36″ x 20′	Atwood & Nash, Inc.
National Park Seminary	Forest Glen, Md.	6 No. 125	36″ x 21′	James E. Ament, President of Seminary
Ira Allen Chapel, University of Vermont	Vermont	6 Detail	34″ x 32′	McKim, Mead & White
School for the Deaf	Danville, Ky.	4 No. 154	34″ x 27′	Frankel & Curtis
Masonic Temple	Floral Park, N. Y.	4 No. 145	34″ x 21′	S. Person
Smith College "Music Hall"	Northampton, Mass.	14 Detail	30″ x 36′	Delano & Aldrich
Odd Fellows Home	Lexington, Ky.	4 No. 142	30″ x 24′	Frankel & Curtis
Hollis Rinehart Residence	Charlottesville, Va.	6 No. 152	30″ x 23′	Marsh & Peter
Gettysburg College	Gettysburg, Pa.	4 Detail	30″ x 20′	Baum, Philadelphia
Middlesex Institute of Savings	Concord, Mass.	4 No. 125	20″ x 29′	Frohman, Robb & Little
Jefferson Grade School	Summit, N. J.	4 Detail	26″ x 25′	Guilbert & Betelle
Arlington High School	Arlington, Mass.	12 Detail	22″ x 18′	George Ernest Robinson
Albany Boy's Academy	Albany, N. Y.	96 Columns and Pilasters		Marcus T. Reynolds
U. S. Veteran's Bureau Hospital	Northport, N. Y.	150 Columns		U. S. Treasury Department
U. S. Veteran's Bureau Hospital	Hartford, Conn.	36 Columns		U. S. Treasury Department
U. S. Veteran's Bureau Hospital	Somerset Hills, N. J.	20 Columns		U. S. Treasury Department
U. S. Veteran's Bureau Hospital	Excelsior Springs, Mo.	30 Columns		U. S. Treasury Department
U. S. Veteran's Bureau Hospital	Indianapolis, Ind.	28 Columns		U. S. Treasury Department
Wm. C. Chaplin Residence	Easton, Md.	4 No. 145	22″ x 21′	Emory Ross
Church of Christ	College Station, Tex.	4 No. 130	21″ x 21′	Ernest Langford
St. Joseph College	West Hartford, Conn.	8 Detail	18″ x 13′	Maginnis & Walsh
M. E. Church—South	Ashland, Tenn.	4 No. 141	18″ x 14′	H. M. King
Public Library	Morganton, N. C.	4 Detail	17″ x 19′	M. R. Marsh
Pi Phi House, Butler University	Indianapolis, Ind.	4 Detail	15″ x 18′	Burns & James
U. S. Marine Base	Quantico, Va.	6 Detail	28″ x 21′	U. S. Bureau
U. S. Naval Air Station	Pensacola, Fla.	32 Detail	24″ x 21′	U. S. Bureau
Lynchburg Hospital Building	Lynchburg, Va.	6 Detail	36″ x 27′	Stanhope S. Johnson
Hollidaysburg High School	Hollidaysburg, Pa.	4 Detail	26″ x 26′	Hunter & Caldwell
Morrisville School	Morrisville, N. Y.	6 Detail	24″ x 26′	Carl W. Clark
Berlin School Building	Berlin, N. Y.	6 Detail	17″ x 26′	H. O. Fullerton
Junior-Senior High School	Plymouth, Mass.	4 Detail	36″ x 25′	Frank Irving Cooper
Waynesboro High School	Waynesboro, Pa.	4 Detail	28″ x 25′	Laurie & Green
Somerset High School	Fall River, Mass.	4 Detail	24″ x 25′	I. T. Almy
Camden High School	Camden, S. C.	4 Detail	24″ x 24′	La Faye & La Faye
University of Delaware Chemistry Building	Newark, Del.	2 Detail	34″ x 23′	Charles I. Klauder
Catskill School Building	Catskill, N. Y.	4 Detail	26″ x 23′	Ernest Sibley
Ipswich School	Ipswich, Mass.	4 Detail	24″ x 23′	J. Wm. Beal & Son
Amherst College	Amherst, Mass.	8 Detail	36″ x 22′	McKim, Mead & White
Middleburg Town Hall	Middleburg, Conn.	2 Detail	26″ x 22′	E. J. Richmond
U. S. Naval Air Station	Pensacola, Fla.	32 Detail	24″ x 21′	U. S. Treasury Department
Quincy City Hospital	Quincy, Mass.	10 Detail	28″ x 20′	Paul A. & Carroll Coletti
State Teachers College	Harrisonburg, Va.	4 Detail	28″ x 19′	J. Binford Walford
Veteran's Administration Building	Jefferson, Mo.	10 Detail	25″ x 19′	U. S. Treasury Department
First Baptist Church	Medford, Mass.	4 Detail	20″ x 16′	Edward Melville Bridge
First Presbyterian Church	New Rochelle, N. Y.	4 Detail	33″ x 27′	John Russell Pope

HARTMANN-SANDERS CO.

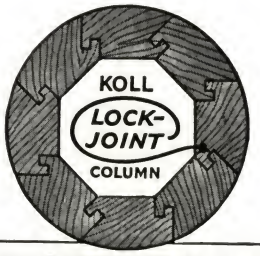
Exclusive Manufacturers of Koll's Patent Lock-joint Wood Staved and Turned Columns

MAIN OFFICE AND FACTORY
2155-2187 Elston Avenue, CHICAGO, ILL.
EASTERN OFFICE, 101 Park Avenue, Architects Building, NEW YORK, N. Y.

Products

KOLL'S PATENT LOCK-JOINT WOOD STAVE COLUMNS for exterior and interior; columns made in all woods; ROPED COLUMNS with pilasters and square columns; EXTERIOR and INTERIOR WOODWORK; COMPOSITION ORNAMENTAL CAPITALS.

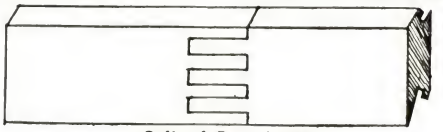
Also manufacturers of Pergolas, Lattice Work, and all architectural work for the garden.



THEY CANNOT COME APART

Spliced Butt Joint

In addition to the perfect lock joint of the staves, a joint has been devised to splice the



Spliced Butt Joint

butts of the staves should the length of column call for material longer than can be secured in one piece. In this process joints are put together with screw pressure and cold water waterproof glue, which helps to make these columns mechanically perfect.

Architect's Details

Columns conform accurately to any detail, are of the best materials and at as reasonable rates as are consistent with good work.

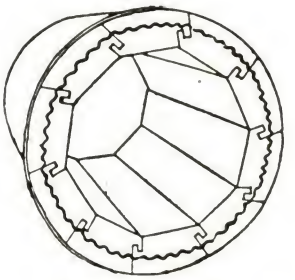
Our Patent Correct Entasis

Correct entasis secured in forming stave itself—The staves in all columns manufactured under Koll's patent are, in order to secure the proper entasis, straight one-third and swell-tapered upper two-thirds, so that when shaft is formed the correct entasis is obtained, securing sufficient stock at top and bottom of shaft to permit turning to detail without cutting too close to joint.

Columns furnished in any style of fluting or reeding.

Steel Reinforcement

A corrugated steel band or ferrule reinforcement is applied to the bottom end of all Doric columns. The steel band, while adding considerable strength to the shaft, permits some flexibility so that no injury can be done by moisture that may be absorbed. This reinforcement is also added to both ends of all large columns.



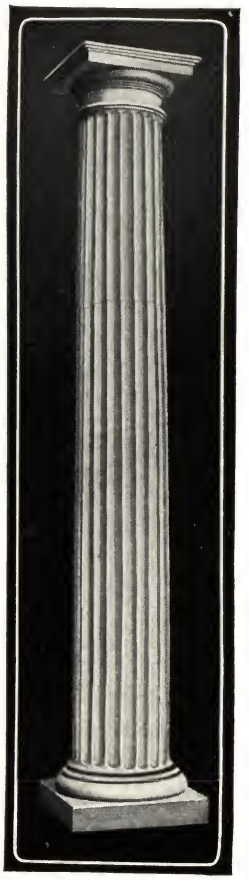
Steel Reinforcement

No. 195
Greek Doric Column Fluted

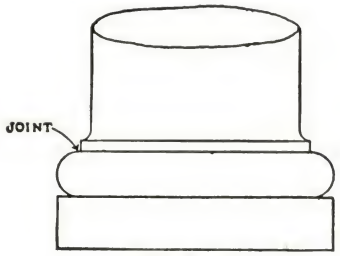
No. 235
Fluted Column Roman Ionic Cap Attic Base

No. 220
Plain Column Doric Cap Attic Base

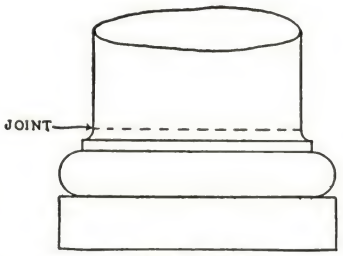
No. 255
Fluted Column Corinthian Cap Attic Base



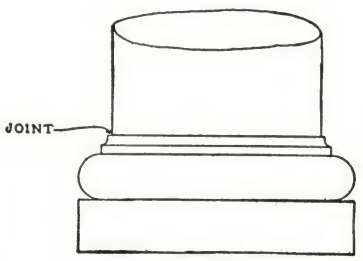
No. 215
Roman Doric Column Fluted



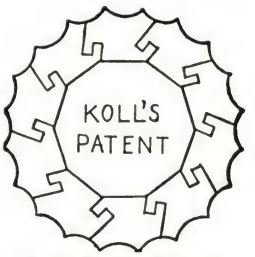
Style A Cove



Style B Cove



Style C Cove



Doric Fluting Columns
195, 195⅔, 215 and 215⅔

KOLL'S PATENT WOOD COLUMNS

	2-in. stock	2½-in. stock	3-in. stock	4-in. stock
With Cove on Shaft Like Style A				
Plain shaft.....in.	up to 18	19 to 22	23 to 30	31 and up
Doric and Ionic fluted .in.	up to 16	17 to 19	20 to 27	28 and up
Doric fluted, No. 195...in.	up to 22	21 to 28	29 to 39	40 and up
Cove Planted on Like B, or Made a Base Member Like C				
Plain shaft.....in.	up to 22	23 to 30	31 to 40	41 and up
Ionic fluted.....in.	up to 22	23 to 28	29 to 38	39 and up

Note: Before ordering columns, it would be well to examine detail closely and note whether cove is to be part of shaft, or whether this can be planted on. This company can make the column either way, but of course must be guided by what specifications and details call for.

Waterproof Glue

The staves of all columns and all exterior work produced by us are put together with cold water waterproof casein glue. Inside of all columns and pilasters above 14 ins. is waterproofed with a special waterproof compound.

Thickness of Stock

As the price of column is regulated by the amount and kind of lumber that enters into its construction, it is very important to state in the specifications the thickness of stock of which columns are to be made.

Our experience as specialists in column construction has demonstrated that thickness of stock for the various sizes, as called for in the table provides enough material to carry out properly the architectural detail and to afford required strength. Should an unusual load be placed on the columns, they can be reinforced by inserting a timber or iron column. When necessary to incase a structural timber or iron column already in place, columns can be made in halves and doweled or rail bolted as desired.

Flashings

Entire top of all wood and ornamental caps should be flashed with either galvanized iron, copper or sheet lead to protect the same from the weather. These flashings will be furnished when so specified.

Roped Columns

We have facilities for making roped columns and Colonial roped balusters, both for exterior and interior work. We can furnish them in stock designs or according to the architect's detail.

Cast Iron Metal Plinths

When columns rest on a cement or brick floor, the use of cast iron metal ventilated plinths is recommended. We furnish these in all sizes.

Cast Iron Metal Plinth

Specifications

Columns shall be the Koll's Patent Lock-joint Staved Wood Column, manufactured by the HARTMANN-SANDERS CO., Chicago and New York, made according to their design No. ....

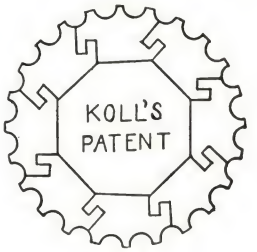
(Here specify the number in catalogue and if design is to be made according to the architect's drawing say: To be made according to details furnished.)

Staves shall be made of clear white pine stock (here specify the thickness wanted).

(See schedule for thickness of staves necessary for the various sizes of columns.)

Shafts, bases and gaps shall be glued with waterproof cold water glue; for staves longer than ordinary lumber length, staves shall be lengthened with a splice joint. Top of all column caps shall be flashed with galvanized iron (sheet lead or copper). The flashing to extend ½ in. over the edge of caps. The square plinths of column shall be cast iron ventilated plinths (or proper ventilation to be provided for the columns if stone concrete or wood plinths are used).

Columns shall be primed at the factory with a coat of white lead and oil on the outside, and all columns above 14 ins. shall receive a coat of waterproof asphaltum paint on the inside of shaft.



Ionic Fluting
Used on all other fluted columns shown in catalogue

Note: Should the columns arrive at building before they are ready to install, they must be stored in the building, or properly protected with waterproof coverings in a thorough manner, including both ends, and top of the column shafts. Do not lay columns directly on ground.

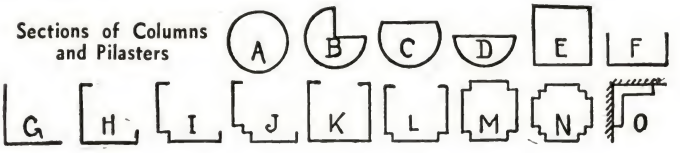
Instructions for Ordering

When ordering columns from our catalogue refer always to our catalogue numbers—give quantity wanted and size at largest and smallest diameter of shaft, and length over all. State if for *interior* or *exterior* use.

Note: All our details are carefully planned from dimensions given by approved authorities but we make no extra charge for following your detail, if similar to any of the designs shown in our catalogue.

When ordering pilasters to match columns, give dimensions at top as well as bottom of shaft, or state whether width is to be equal to the largest or smallest diameter of the column, or if they are to have the mean diameter of column shaft or if they are to have the same taper as the column. Give also depth of return. Refer to line drawing of sections of columns and pilasters when ordering.

Sections of Columns and Pilasters



We prime all exterior and interior columns (unless made of hardwoods) one coat of lead and oil, unless otherwise notified. We make no extra charge for priming.

When composition caps are to be used, we furnish without extra cost suitable wood dowels with columns to carry the weight of the overhead work.

Details

Unless specified to the contrary when ordering, all columns are made according to the proportions of the styles of architecture shown by the various cuts in the catalogue, but we can, if desired, make them according to the architect's detail.

Colonial Entrances and Millwork

Our extended efforts in the field of Colonial Architecture has enabled us to develop our organization to such a degree that we are in position to furnish in addition to our columns and pilasters, also Colonial entrances and millwork generally, either to the architect's detail or our own design.

Catalogues

We send the following catalogues on request:
Catalogue No. 48-8, Wood Columns and Pilasters.
Catalogue No. 53-8, Colonial Entrances.
Catalogue No. 39-8, Pergolas, Architectural Woodwork for the Garden and Garden Accessories.

THE UNION METAL MANUFACTURING CO.

GENERAL OFFICES AND FACTORY
CANTON, OHIO

SALES OFFICES

ATLANTA, GA., Atlanta Athletic Club
BALTIMORE, MD., 513 Old Orchard Road
BOSTON, MASS., 1302 Boylston Street
CHICAGO, ILL., 4727 No. Lamon Avenue
LOS ANGELES, CAL., 1001 North Mansfield Avenue
NEW YORK, N. Y., 70 Pine Street
SAN FRANCISCO, CAL., Tilden Sales Building, 7 Front Street

Products

UNION METAL COLUMNS and PILASTERS.

Also manufacturers of Exterior Lighting Fixtures and Tapered Steel Shells for Cast-in-Place-Pile.

UNION METAL
FLUTED STEEL PRODUCTS

Stock and Special Designs

Ten classical designs are shown herewith.

Our portfolio of designs and installations shows many buildings where our columns have been used and a large number of attractive Colonial entrances. Also an attractive line of garden pergolas.

Write for combined column and pergola Catalog No. 50-H.

Advantages of Union Metal Columns

(1) Architecturally correct.
(2) Clean cut, highly ornamental and stately.
(3) Will not rot, check or open at joints.
(4) Pressed steel construction eliminates all glues and fillers.
(5) Fireproof and weatherproof.
(6) Have entasis and stopped flutes.
(7) Not experimental, but used on thousands of representative buildings in the United States and abroad.
(8) Indestructible and will outlast the buildings; suitable for all climates and temperatures.
(9) Easily handled, transported and erected.

Load-bearing Formulae

(Result of tests made by Robert W. Hunt & Co.). Applies to designs, Numbers 240, 246, 212, 213, 219, 224, 230, 237 and 222.

For 1-ply, 22 gauge shaft:
460 x top diameter in inches equals .... pounds dead lead.
For 2-ply 22 gauge shaft:
860 x top diameter in inches equals .... pounds dead load.

Example: 12-in. diameter column tapering to 10-in. top diameter—
1-ply shaft: $460 \times 10 = 4600$ pounds dead load.
2-ply shaft: $860 \times 10 = 8600$ pounds dead load.

Note: When designs using composition capitals are ordered and are expected to carry an unusually heavy weight, this should be explained to us so that a heavier core band than ordinarily furnished will be supplied for inside the capital.

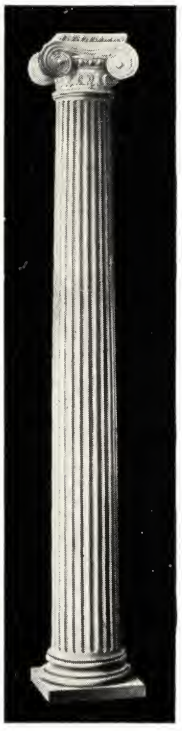
Load-bearing Formula for Design Number 700

For 1-ply, 22 gauge shaft:
1250 x top diameter in inches equals .... pounds dead load.
For 2-ply 22 gauge shaft:
2000 x top diameter in inches equals .... pounds dead load:

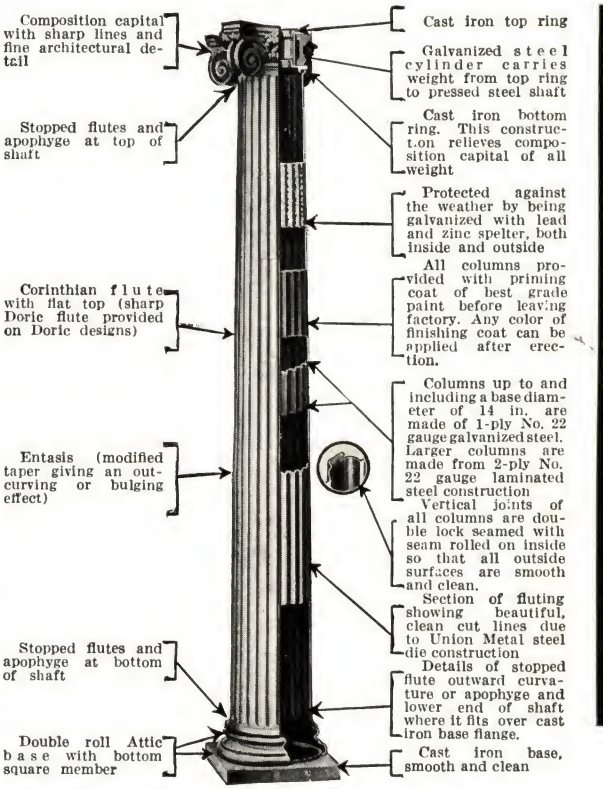
Example: Number 700 column, 12-in. tapering to 9-in. top diameter—
1-ply shaft: $1250 \times 9 = 11{,}250$ pounds dead load.
2-ply shaft: $2000 \times 9 = 18{,}000$ pounds dead load.
A safety factor of 2 is recommended.

Standard practice is to furnish columns up to and including 14-in. diameter with 1-ply shaft, but when desired, 2-ply can be furnished at an increase in price. All columns larger than 14-in. diameter are furnished 2-ply, 22 gauge shaft.

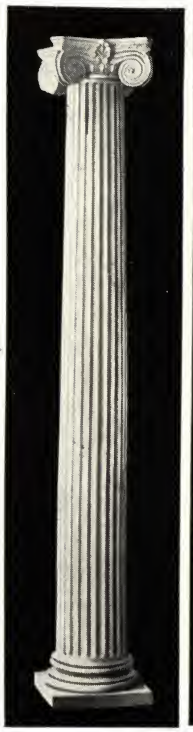
Design 212
Roman
Corinthian



Design 230
Greek
Ionic



Construction Details of Union Metal Columns

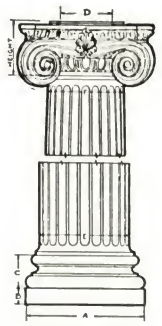


Design 237
Modern
Ionic

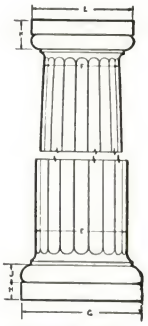
Design 222
Italian
Ionic
(Scamozzi)

Architects' Specification

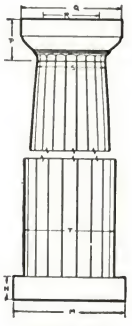
The fluted columns used shall be Union Metal Pressed Steel Columns with entasis and stopped flutes, manufactured by THE UNION METAL MANUFACTURING CO., *Canton, Ohio.* The design number, style and size of columns to be used are indicated on drawings. The manufacturer shall apply a priming coat of high grade paint to all columns before shipment from his plant.



Comp. Cap. Designs 212, 230, 237, 222, 213, 219, 224



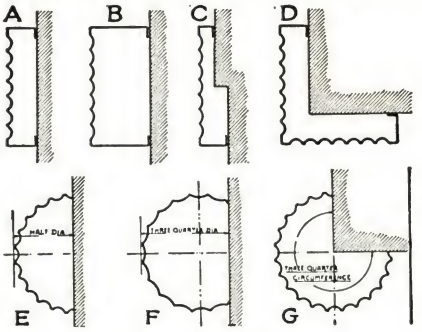
Designs 240 and 246



Design 700

Pilasters and Odd Shaped Columns

We can furnish flat and corner metal pilasters and half-round and three-quarter round metal columns in all sizes to match stock or special designs of Union Metal Columns.



A—Quarter return pilaster
B—Half return pilaster
C—Unequal return pilaster
D—Quarter return corner pilaster
E—Half column
F—Three-quarter column
G—Three-quarter corner column

Union Metal Pilasters and Odd Shaped Columns

When ordering pilasters, specify whether face shall be tapered to match columns or whether face shall be straight from top to bottom. Unless otherwise ordered, bottom and top faces of pilasters will be furnished same as bottom and top diameters of columns, in which case pilaster bases and caps will match those of columns. All Union Metal pilasters are fluted on front face to match columns but are not fluted on return faces without extra cost. Pilasters are not provided with entasis

Dimension Chart of Union Metal Columns

DIMENSIONS OF UNION METAL COLUMNS

Bott. dia. of shaft	Designs No. 212, 230, 237, 222, 213, 219 and 224													Design No. 240						Design No. 246						Design No. 700						
	A	B	C	D	E	F	Height of Capital							G	H	J	K	L		G	H	J	K	L	R	M	N	P	Q	R	S	T
							212	230	237	222	213	219	224																				
8	0 5/8	1 5/16	3	3 5/16	8	6 1/2	9 7/8	6 5/8	4 5/8	4 5/8	8 7/8	11 1/8	4 5/8	11	1 3/16	1 5/8	2 1/2	8 5/8		10 9/16	1 15/16	1 15/16	4 3/8	9 3/4	5								
10	13 15/16	1 11/16	3 3/8	5 3/16	9 3/4	8	13 1/16	9 1/16	6 3/16	5 5/16	12 9/16	13 1/16	6 1/16	13 1/4	1 13/16	1 7/8	3 3/16	11		13 1/4	2 1/16	2 7/16	5 7/16	12	6 1/4	12 3/8	2 1/2	4 5/8	10 7/8	5 1/4	7 1/2	10
12	16	1 7/8	4 3/16	6 15/16	12	9 3/4	15 1/8	11 1/8	6 7/8	5 5/8	15 7/8	15 3/8	7 5/8	16	2 5/16	2 1/4	3 13/16	13 1/4		15 7/8	2 7/8	2 15/16	6 11/16	14 7/8	8	14 1/2	3	5 5/16	13	6 1/2	9	12
14	15 5/8	2 5/16	4 3/4	8 5/8	14	12	16 3/4	13 1/4	7 5/8	6 3/4	18 1/2	19 1/4	8 3/4	18 5/8	2 3/4	2 3/4	4 9/16	16		18 1/2	3 3/8	3 3/8	8	18	9 1/2	16 5/8	3 3/8	6 1/2	15 1/2	7 1/4	11	14
16	20 5/8	2 5/16	5 7/16	8 5/8	15 3/4	12	16 7/8	13 3/8	7 3/4	6 7/8	18 5/8	19 3/8	8 7/8							20 13/16	3 3/4	3 3/4	8	18	9 1/2	18 7/8	3 7/8	7 1/16	16 3/4	7 7/8	12	16
16	20 5/8	2 9/16	5 7/16	10 5/16	15 3/4	14	18 1/2	15 3/4	10	8	21 1/4	22 1/2	10 3/4							20 13/16	3 3/4	3 3/4	9 3/8	21	10								
18	22 15/16	2 13/16	6 1/16	10 5/16	17 3/8	14	18 1/2	15 3/4	10	8	21 1/4	22 1/2	10 3/4							22 7/8	4 3/16	4 1/8	9 3/8	21	10	20 1/8	4 1/4	8 1/16	19 1/4	8 3/4	14	18
20	25 7/8	3 3/16	6 3/4	11	19 1/2	15 3/4	23 7/8	17 7/16	11 3/16	8 15/16	24 7/16	24 3/16	11 15/16							25 3/4	4 11/16	4 11/16	10 3/8	23 5/8	12 1/2	23 3/8	4 3/4	9 11/16	21 15/16	10 1/16	15	20
20	25 7/8	3 3/16	6 3/4	13 9/16	19 1/2	17 3/8	26 13/16	17 7/16	12 5/16	10 1/16	26 9/16	27 9/16	13 9/16							25 3/4	4 11/16	4 11/16	11 1/4	26	14								
22	28 3/4	3 3/16	5 7/8	13 9/16	22	17 3/8	26 13/16	17 7/16	12 5/16	10 1/16	26 9/16	27 9/16	13 9/16							29	5 1/4	5 5/16	11 1/4	26	14	25 7/16	5	10	24	9 3/4	17	22
24	32 1/16	4	6 3/4	15 5/8	23 1/2	19 1/2	29 11/16	20 11/16	12 7/16	10 15/16	28 11/16	29 11/16	15 5/16							31	5 5/8	5 11/16	12 5/8	29 1/4	15	27 1/2	5 1/2	10 3/16	24 3/8	10	18	24
26	34 1/2	4 1/2	7 7/16	15 5/8	25	19 1/2	29 11/16	20 11/16	12 7/16	10 15/16	28 11/16	29 11/16	15 5/16							33	6	6	12 5/8	29 1/4	15	30	6	12	28 5/8	13 1/2	20	26
26	34 1/2	4 1/2	7 7/16	17 1/4	25	22	32 9/16	21 13/16	12 9/16	12 1/16	32 13/16	32 9/16	16 13/16							33	6	6	14 9/16	33	15 13/16								
28	37 1/8	5 1/8	8 7/16	17 1/4	26 7/8	22	32 9/16	21 13/16	12 9/16	12 1/16	32 13/16	32 9/16	16 13/16							35 1/2	6 7/16	6 1/2	14 5/16	33	15 13/16	32	6 3/8	13 1/4	31 3/4	15	22	28
30	39	5 1/2	9 7/16	19	29 1/4	23 1/2	35 7/16	23 7/16	12 11/16	13 3/16	35 7/16	35 7/16	17 15/16							38 1/2	7	7	15 3/8	35 1/4	18	34 1/2	6 7/8	14 1/2	34 3/4	16	24	30
32	41 9/16	6	10 7/8	20 5/8	31 7/8	25	39 11/16	24 15/16	13 3/16	14 3/16	34 7/16	36 15/16	18 7/16							42 1/4	7 11/16	7 11/16	16 1/4	37 1/2	19 1/2	36 3/4	7 3/8	14 1/2	34 3/4	16	24	32
34	42 1/2	6 1/4	10 1/4	23 3/8	34	26 7/8	42	26	16	15	36	40								44 3/4	8 5/16	8 1/8	17 1/2	40 3/8	22	39	7 3/4	16 1/2	43	18	28	34
36	45 1/2	6 5/8	11 1/4	25 3/8	36	29 1/4	42 3/16	28 3/16	18 3/16	16 3/16	40 3/16	42 3/16	21 3/16							47 1/2	8 5/8	8 11/16	19 1/16	43 3/4	23	41 1/2	8 1/4	16 1/2	43	18	28	36
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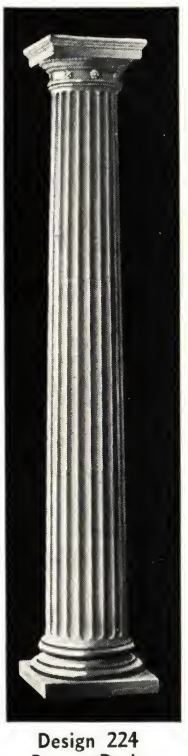
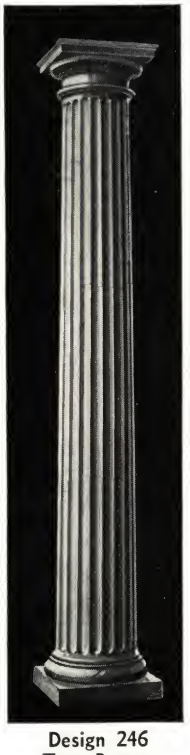
D and R dimensions represent opening through capital.

Design 213
Temple of the Winds

Design 219
Italian Composite



Design 224
Roman Doric (Diocletian)



Design 246
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Design 700
Greek Doric

Design 240
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MEMORANDA

LATH, PLASTER AND WALLBOARD
- SECTION - 9

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Certain-teed

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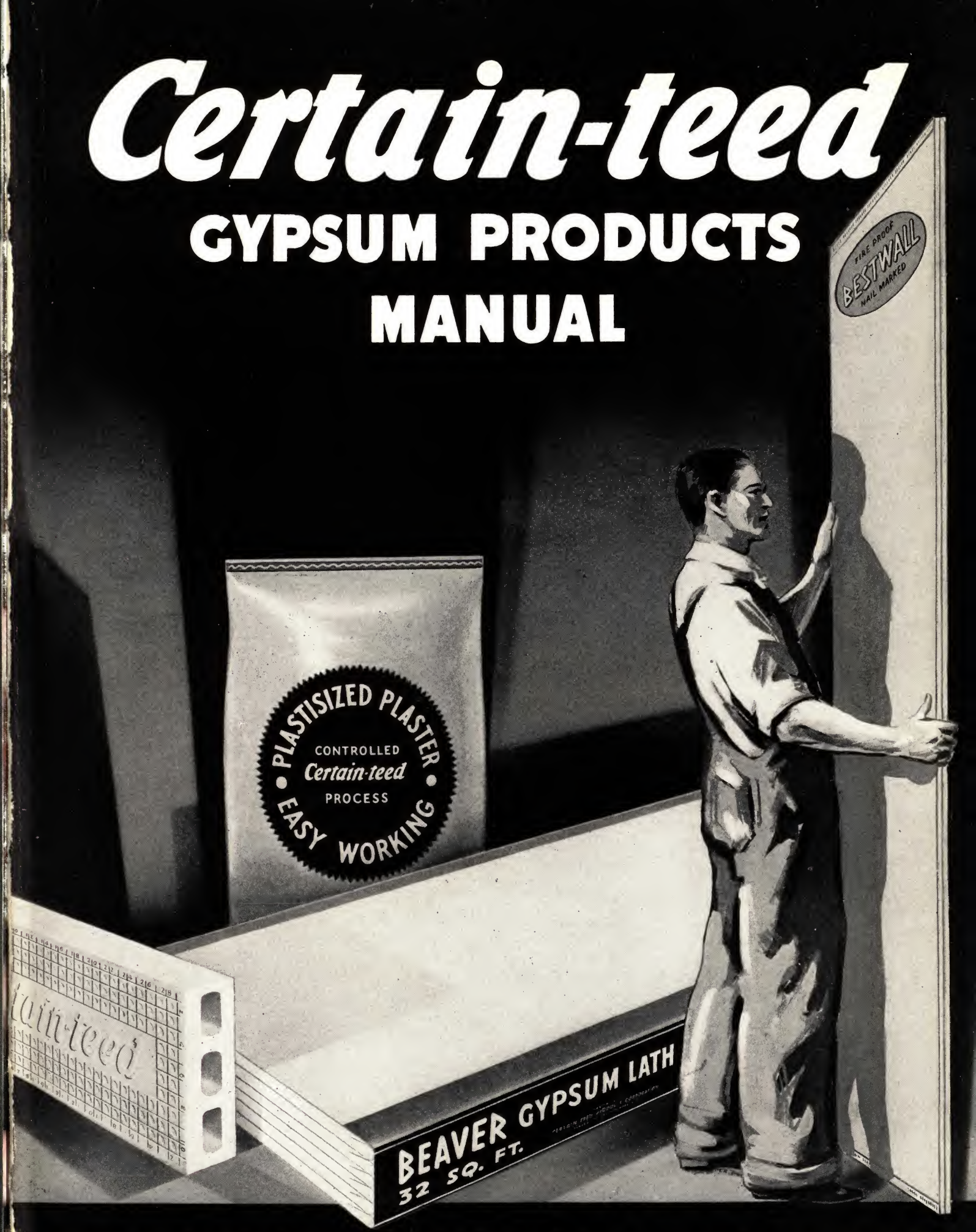

CERTAIN-TEED PRODUCTS CORPORATION, General Offices, New York, N. Y.

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Certain-teed

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GYPSUM PRODUCTS

"PLASTISIZED" PLASTER
Fibred, Extra-Fibred, Unfibred, Sanded
Bond Plaster (For Use Over Concrete)
MOLDING—GAUGING—KEENE'S
GYPSUM PREPARED FINISHES
Gray or White Sand Float Finish
Gray or White Prepared Trowel Finish
PATCHING PLASTER
GYPSUM PARTITION TILE—CERTAIN-TEED
SOUND-ABSORBING PLASTER—KALITE
Kalite "H"—Kalite Hydraulic—Kalite Cast
GYPSUM WALL BOARD—BESTWALL
INSULATING GYPSUM WALL BOARD
(Reflective Insulation)
GYPSUM LATH
Plain—Perforated
INSULATING GYPSUM LATH
(Reflective Insulation)
GYPSUM LINER BOARD
GYPSUM SHEATHING
DRY FILL INSULATION
BESTWALL JOINT SYSTEM
HYDRATED FINISHING LIME
MASONS' HYDRATED LIME

SALES OFFICES

ATLANTA
1111 Rhodes Haverty Bldg.

BALTIMORE
1310 Lexington Bldg.

BUFFALO
Beaver and Military Roads

CHICAGO
105 W. Adams Street

CLEVELAND
45 Prospect Avenue, N. W.

DALLAS
1232 Allen Bldg.

KANSAS CITY
12th and Crystal Streets

LOS ANGELES
1228 Produce Street

NEW YORK
100 East 42nd Street

ST. LOUIS
317 N. 11th Street

ST. PAUL
788 Hampden Avenue

SAN FRANCISCO
315 Montgomery Street

SEATTLE
1904 Third Avenue

PLANTS

Acme, Texas

Akron, N. Y.

Blue Rapids, Kansas

Fort Dodge, Iowa

Grand Rapids, Mich.

Gypsum, Ohio

WAREHOUSES

Charlestown, Mass.

Detroit, Mich.

Los Angeles, Cal.

Philadelphia, Pa.

Port Newark, N. J.

Richmond, Cal.

GYPSUM PRODUCTS MANUAL

"PLASTISIZED" PLASTERS—BASE COATS

ACME **BEAVER**

Agatite ***Certain-teed***

"Plastisized" Plaster is an improved type of plaster made by Certain-teed under the brand names Acme, Agatite, Beaver, and Certain-teed. The exclusive Certain-teed controlled process of manufacturing "Plastisized" Plaster assures highly satisfactory walls when used according to directions.

"Plastisized" Plaster is available fibered for use as a first or scratch coat on wood or metal lath or for scratch and brown coats on all other types of plaster bases except concrete; also extra fibred for scratch coat on metal lath, and unfibred for scratch coat on gypsum lath, gypsum tile, and masonry, or for brown coats on all types of plaster bases except concrete.

Wood fibred plaster is available for use without sand or with one part of sand by weight. It mixes readily and produces exceptionally strong, hard walls having superior fire-resisting properties. It is used for scratch and brown coats on all types of plaster bases except concrete, and also for patching and repair work.

Sanded "Plastisized" Plaster is mixed with sand at the mill. It is supplied in fibred, unfibred, and wood-fibred types to be used for the same purposes as cement plaster for first or scratch coat and second or brown coat on all types of plaster bases except concrete.

Bond plaster mixes and spreads easily, and produces a hard, strong, fire-resisting, protective coat for use as scratch and brown coat *on concrete surfaces.*

COVERING CAPACITIES

Approximate Square Yardage Obtained With One Ton of Various Types of Plaster

Type of Plaster	Lath Gypsum	Metal Lath	Wood Lath	Gypsum Tile	Clay Tile or Brick
Neat*	225 to 240 Sanded 2 to 1	105 to 135 Sanded 2 to 1	180 to 210 Sanded 2 to 1	235 to 255 Sanded 3 to 1	165 to 200 Sanded 3 to 1
Wood Fibered	115 to 120 Mixed with water only. No sand.	55 to 65 Mixed with water only. No sand.	90 to 100 Mixed with water only. No sand.	182 to 210 Sanded 1 to 1	150 to 170 Sanded 1 to 1
Ready Sanded	75 to 80 Mixed with water only. No sand.	35 to 45 Mixed with water only. No sand.	60 to 70 Mixed with water only. No sand.	65 to 70 Mixed with water only. No sand.	45 to 55 Mixed with water only. No sand.
Prepared Trowel Finish	350 to 400 square yards per ton.				
Sand Float Finish	250 to 275 square yards per ton.				
Gauging Plaster	Will cover approximately 1600 square yards when proportioned: 2 tons hydrated lime to 1 ton of gauging plaster.				
Keene's Cement	As hard finish—400 lbs. Keene's Cement mixed with 100 lbs. lime putty will cover approximately 100 square yards.				

*Neat plaster is either fibered, extra fibered, or unfibered plaster to which sand must be added on the job.

Certain-teed

GYPSUM PRODUCTS MANUAL

Certain-teed

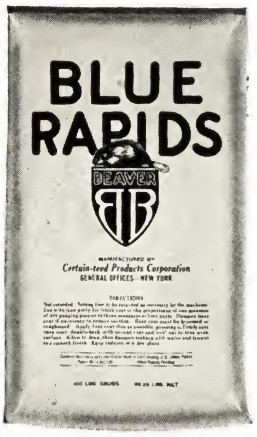
GAUGING—MOLDING—CASTING PLASTERS

Plasterers in most sections of the country are accustomed to use a slow set gauging plaster which is properly retarded at the mill for use with lime putty for a gypsum-lime putty trowel finish. In some sections of the country a quick set gauging plaster is used with lime putty, in which case it is usually necessary to add retarder to obtain the desired setting time. Small amounts of commercial retarder as supplied by the dealer, or small amounts of either unfibred plaster or screened fibred plaster are ordinarily used.

Satin Spar and Acme Gauging — Slow Set — Manufactured from the highest grade white western gypsum rock. Special grinding and processing provide easy working and mixing properties. When properly mixed with a high grade finishing lime, they assure a glossy, smooth, pure-white, flawless surface of uniformly excellent, satin-like texture. Retarder is added at the mill to provide the proper setting time for use with lime putty.

Blue Rapids Gauging Plaster—Quick Set—Similar to Satin Spar Finish in all respects except that it contains no retarder and is, therefore, quicker setting. Usually requires the addition of a small amount of retarder on the job. For spreading capacity see coverage table on page 3.

Directions for Use—(a) Mixing — Use either hydrated lime putty or thoroughly slaked quick-lime putty in the proportions of one measure of dry gauging plaster to three measures of lime putty. This is approximately equivalent to one part of dry gauging plaster to two parts of dry hydrated lime by weight. Make a ring of thoroughly hydrated lime putty on the mixing board, adding clean water in the center. Add the gauging plaster to the water. Allow to soak for a few minutes. Then mix to a creamy consistency and cut the lime putty thoroughly into the mixture, making a paste of uniform consistency.



(b) Applying — See Basic Specifications for Lathing and Plastering on pages 9 and 10.

Note: To soak hydrated lime fill water-tight box about two-thirds full of clean water. Sift lime gradually through a coarse screen, allowing it to settle under its own weight until the water is dried up and the lime fully soaked. Then supply enough excess water to furnish one to two inches of water over the lime. Soak over night in order to provide the required plasticity.

Sunflower Molding and Casting Plaster—Made from 99.0% pure gypsum rock eminently suited for the purpose, ground exceedingly fine and specially processed to make strong, hard, pure-white molds free from voids and pin holes. Under ordinary job conditions will set in from 15 to 25 minutes. Because of its superior quality and general dependability it is preferred by architects, contractors, and mechanics. It is cool working and especially suited for casting in gelatin molds. When mixed to plastering consistency the resulting dry casts will have a tensile strength of more than 500 lbs. per square inch and a compressive strength of more than 2,500 lbs. per square inch.

Used for ornamental work in hundreds of theatres, hotels, and palatial homes throughout the country. It is used for marble setting, statuary, and ornamental novelties—wherever a quick-setting, pure-white dense plaster is desired.

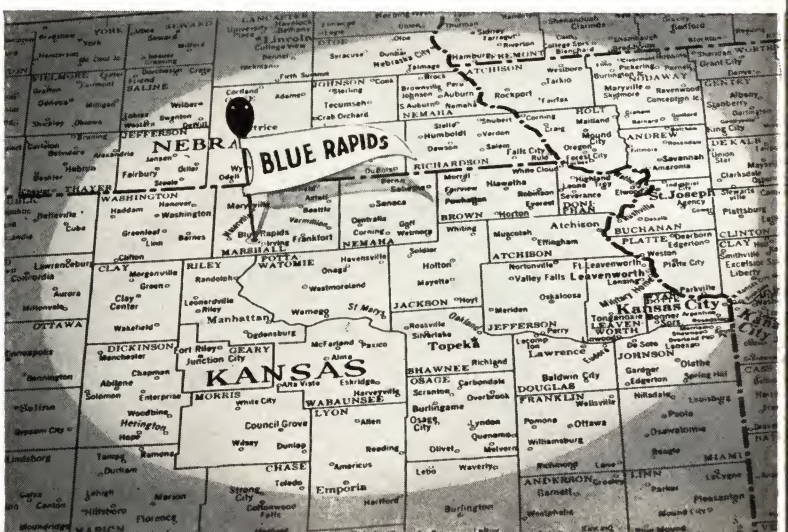
Certain-teed Statuary Casting Plaster contains a special case hardening material, giving a harder surface that resists abrasion and eliminates the need for a sizing coat when the casting is to be ornamented or painted.

Keene's Cement is a pure-white gypsum plaster which has been subjected to high temperature during calcination to give a plaster of great strength and hardness. It can be stored for years without deterioration. The regular grade is used for general plastering purposes and for the manufacture of caenstone and Travertine finishes, scagliola work, castings, and run moldings.

The fast finish grade is used with lime putty as a gauging plaster for smooth, white finish. Specify *Best Bros. Regular* or *Best Bros. Fast Finish.*

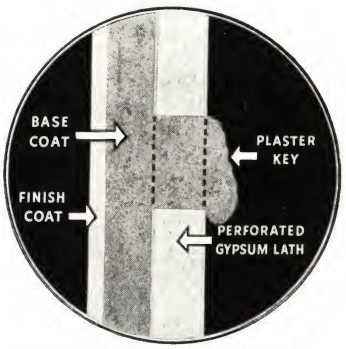
For *Hydrated Finishing Lime* and *Hydrated Mason's Lime* specify Certain-teed brands.

Superiority of Certain-teed's Plaster Products Is Due to Use of the Finest Raw Materials as Well as to Manufacturing Control. The Map Below Shows the Source of the Famous Blue Rapids Gypsum in northern Kansas.



GYPSUM PRODUCTS MANUAL

GYPSUM LATHS—INSULATING LATHS

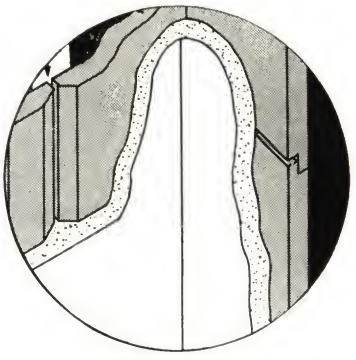


PERFORATED GYPSUM LATH

Plaster is forced through holes and mushrooms out on the back of the lath to provide a mechanical key in addition to the natural bond of the lath and plaster, giving utmost strength.

REFLECTIVE INSULATION

The aluminum foil surface available on Beaver Gypsum Lath provides efficient insulation without additional application cost. Specify Beaver Gypsum Lath with Reflective Insulation.



KEY LAP LATH

Beaver Insulating Key Lap Lath serves a dual purpose—as an efficient fibre insulation and as a high grade plaster base at one cost of application.

Plaster Bases

Certain-teed manufactures a full line of plain and insulating plaster bases. These include Beaver Perforated Gypsum Lath, Beaver Gypsum Lath (plain), Beaver Insulating Gypsum Lath (Reflective Insulation), and Beaver Insulating Key Lap Lath (100% Cane Fibre), in addition to Certain-teed Gypsum Partition Tile.

Beaver Perforated Gypsum Lath

Perforated Gypsum Lath offers effective fire protection, having qualified for a one-hour fire rating with a considerable margin of safety. This lath holds the plaster with a double bond — a natural intermingling of the crystalline surface of the plaster with the fibre surface of the lath, and by mechanical keys as shown in the illustration at the left.

This double bond makes interior walls and ceilings not only stronger but also more resistant to cracks. The circular perforations are spaced 4 inches apart and each perforation is ¾" in diameter. When plaster is applied over this lath it is forced through these perforations and mushrooms out on the back of the lath, giving 48 of these keys to each sheet of lath.

Being made of gypsum, Beaver Perforated Gypsum Lath will neither burn nor support combustion, and in fact it protects the wood members to which it is applied. It works with the ease of lumber, is applied with nails, and can be sawed or scored along a straight edge and broken. Standard size is 16" x 48", ⅜" thick.

Beaver Gypsum Lath

Consists of a gypsum core strongly reinforced on both sides with specially prepared fibre surfacing which makes an ideal base for plaster. The strong, rock-like core of these closed edge lath panels provides exceptional structural value and support.

Gypsum lath is highly resistant to moisture. There is practically no shrinkage or expansion of the lath—an important feature since it prevents swelling or buckling and consequent cracking of the plaster. This form of lath is quickly applied, saves time (and the material forced through some forms of lath to provide keys), and does not spoil the set of the plaster by absorbing any quantity of water from it. The panels are light, easy to saw and nail, and readily fitted around openings and into odd shaped corners. Standard sizes are 16" x 32" and 16" x 48", ⅜" thick.

Beaver Gypsum Lath with Reflective Insulation

When using Beaver Gypsum Lath as a plaster base, you can provide insulation at trifling additional cost. This gypsum lath is available with an aluminum foil surface. Applied to exterior walls, this lath with its reflective insulation turns back most of the heat, keeping the house cooler in summer and saving fuel by retaining the heat in winter. Thus with no additional cost of application and with only slightly increased material cost, it is possible to provide both a plaster base and insulation. In addition to providing a plaster base and insulation, Beaver Gypsum Lath with Reflective Insulation gives the fire protection and exceptional structural strength of gypsum lath. It comes in ⅜" thickness, 16" x 32", or 16" x 48".

Beaver Insulating Key Lap Lath—100% Cane Fibre

Another insulating plaster base with quality features is Beaver Insulating Key Lap Lath. The key lap joint shown at the left gives plasterers what they have long desired—a deep, straight-side, easy-to-fill mechanical key along the horizontal joint. This key provides additional strength where it is needed—at the joints. The lath is a 100% cane fibre product of high insulating value—rot-proof, vermin-proof and termite-proof. The lath can be applied much more quickly than ordinary lath, and in addition to the plaster base afforded gives great structural strength. As a plaster base, Beaver Insulating Key Lap Lath offers a smooth surface which gives a beautiful finished job on both walls and ceilings. Size of the sheets is 18" x 48".

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GYPSUM PRODUCTS MANUAL

Certain-teed

KALITE SOUND-ABSORBING PLASTERS

Photograph Showing Surface of Kalite Plaster. Enlarged View Shows Great Porosity of Surface

Three types of Kalite sound-absorbing products are available. Kalite "H" Plaster is a highly cellular sound-absorbing plaster made of carefully graded and sized pumice of a special variety, mixed with calcined gypsum and other necessary ingredients. It is available in either natural gray or buff. If Kalite sound-absorbing plasters are to be decorated, consult the nearest Sales Office of CERTAIN-TEED PRODUCTS CORPORATION for recommendations.

Kalite Hydraulic Plaster is made of a pumice aggregate with Portland Cement binder, suitable for sound correction purposes where physical conditions require damp-proof construction, such as the walls and ceilings of steam kitchens, swimming pools, etc.

Kalite Cast is a quality material for plain and ornamental casting purposes. It combines high sound-absorbing properties with structural strength, sharp outline of arrises, decorative detail in the finished casting, and a pleasing texture and appearance. Available in five colors—natural white, sandstone, limestone, light buff, and medium buff.

On the job Kalite is mixed with water only and is then ready for application. Kalite mortar weighs approximately one-half as much as ordinary sanded gypsum plaster mortar, and furnishes a smooth or textured hard finish under the trowel.

For a full discussion of sound control, see Certain-teed Fiber Insulation Catalog in Sweet's.

Certain-teed GYPSUM PARTITION TILE

For Fire-proof, Non-load-bearing Construction Certain-teed Gypsum Partition Tile Offers Many Advantages

Certain-teed Gypsum Partition Tile is widely used and highly recommended for non-load-bearing fire-proof partitions and furring, stairway and elevator enclosures, walls in hotels, hospitals, office buildings, stores, and warehouses. It is also suitable for beam and column covering, pipe chases and ventilation ducts.

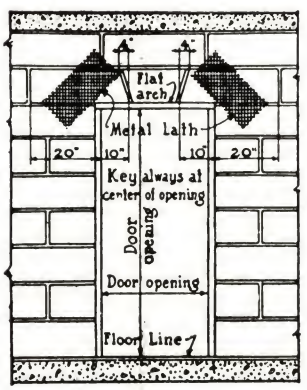
Certain-teed Gypsum Partition Tile, being very light in weight, permits worth-while savings in dead load. Each unit is 30 x 12 in.—2½ sq. ft. in area—requiring less mortar in setting. Uniformly even surfaces require a minimum of plaster. Certain-teed Gypsum Partition Tile is easily sawed to fit corners, pipe chases and conduits with practically no wastage. Alterations are quickly made in finished walls and much of the material can be salvaged for re-use. Grounds and bucks are readily attached by nailing with 10d nails or approved anchors.

Like other gypsum products, this tile is an ideal fire-proofing material, not only because it does not burn itself but also because it does not transmit heat. In composition it consists of set gypsum plaster reinforced with a small amount of fibre.

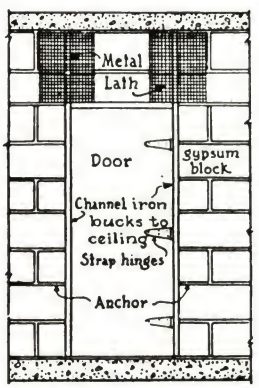
Standard Sizes

Length—30 in.
Width—12 in.
Thickness—Hollow Tile—3 in., 4 in. and 6 in.
—Solid Tile—2 in. and 3 in.

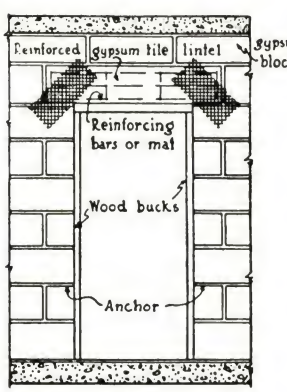
Details of Gypsum Partition Tile Construction



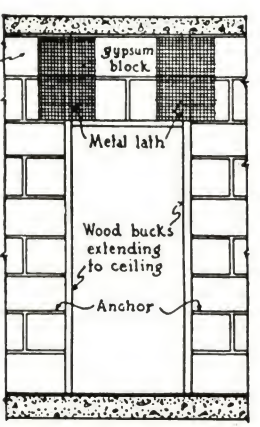
DETAIL SHOWING JACK ARCH CONSTRUCTION



DETAIL OF DOOR WITH CHANNEL IRON FRAME



DETAIL SHOWING REINFORCED GYPSUM LINTEL CONSTRUCTION



DETAIL SHOWING WOOD BUCKS

GYPSUM PRODUCTS MANUAL

BASIC SPECIFICATIONS—LATHING AND PLASTERING

Notes: This specification is arranged to cover an installation of plaster on all types of lath and masonry surfaces. After various paragraphs will be found interpolated notes—which offer information and suggestions. Notes included in ( ) refer directly to preceding paragraphs.

Alternate specifications are suggested and will be found in small type in ( ) inserted after the proper clauses or section of the main specification paragraphs.

Note for Specification Writer: When writing a specification for a project at hand, it is only necessary to use the paragraphs that cover the type of construction contemplated. It may be necessary to slightly revise certain paragraphs to fit the individual requirements.

1—GENERAL

(a) The General Conditions of this specification are hereby made to constitute a part of the specification for Lathing and Plastering.

(See General Notes at end of specifications, Pars. (e), (f) and (g).)

(b) The contractor for plastering shall furnish all materials, labor and scaffolding necessary to completely finish the building in accordance with the intent of the drawings and of the specifications.

(c) The contractor for plastering shall examine all walls, furring, partitions, ceilings, etc., and see that they are in every case secure, true, and plumb or level. He shall report any which are not so to the General Contractor for correction before proceeding to apply any lath, or plaster. Failure to so report shall be taken as assumption of full responsibility for satisfactory conditions by the plastering contractor.

(For frame buildings all exterior and interior studding, all furring joists, rafters, collar beams, etc., will, of course, be specified under Carpentry where it is assumed they will be required to be placed properly and on the centers mentioned under General Notes paragraph (d)—namely: 16 in. for joists and studs and 24 in. for rafters and collar beams.)

2—EXTENT OF WORK AND EXCEPTIONS

(a) Unless otherwise specified and indicated on the drawings, the entire interior of the building shall be lathed and plastered or plastered on masonry, as hereafter specified.

(If any plastering is to be included in an outbuilding or elsewhere, it should be mentioned in Par. (a) unless to be separately contracted for.)

The drawing should distinguish between furred and unfurred masonry and the specifications for Masonry, Carpentry, etc., should likewise provide for the furring or studding out where installed. See General Notes Par. (c). If there are no masonry walls to be plastered, strike out reference in Par. (a).

(b) The plastering shall be the best three-coat work on all lath and two-coat elsewhere. The scratch and brown coats shall be carried down to the rough floor back of all bases, etc., and extended up on all walls of skylights, light wells, etc., unless otherwise provided under Exceptions. On ceilings or other surfaces where there are no grounds, the thickness of the lath and plaster shall equal the full thickness of the grounds specified for that lathing material.

(c) The wall surface in back of all tile wainscoting for walls shall be plastered with a scratch coat of cement mortar, consisting of 1 part Portland cement and 3 parts sand.

(In certain localities jurisdiction has allotted the scratch coat to the tile setters, in which case Par. (c) should be omitted. In this connection the "Basic Specification for Tilework" of the Associated Tile Manufacturers will be found very useful—2nd Edition 1924.)

(d) **EXCEPTIONS**—The only places not to be plastered are (list here locations) and all other spaces marked "not plastered" on the drawings (or, listed in schedule on drawings). No plastering will be required back of (list here such items as, marble, tile and brick wainscoting, etc.).

(In locations where the scratch coat is back of tile wainscoting or wall is conceded to the plasterers, the reference to tile in the list of Exceptions should be omitted.)

3—FURRING

Notes: For frame buildings the wood furring or wood suspended ceilings, to receive lath and plaster, should be included in the Specification for Carpenter Work.

For metal furring or metal suspended ceilings, see Standard Specifications issued by Associated Metal Lath Manufacturers, Inc., which cover all types of metal supports, furring, arches, beams, cornices and suspended ceiling construction. When the desired type of construction has been selected, the paragraphs should be inserted in this section of the Specification—III Furring.

Masonry furring consisting of various types of hollow fireproof blocks or tiles, etc., is of course, included in the specification for Mason Work.

4—LATHING AND PREPARATION OF SURFACES

GYPSUM LATH—

NOTE: **One-Hour Fire Rating**—Where this protection is desired, substitute the words "Beaver Perforated Gypsum Lath" for "Beaver Gypsum Lath."

For Insulating Lath—Where insulation in addition to the protection of Gypsum Lath is desired, substitute the words "Beaver Insulating Gypsum Lath Reflective Insulation" for "Beaver Gypsum Lath."

For Fiber Insulation Lath—Where a fiber insulation lath is desired, substitute in the specification the words "Beaver Insulating Key Lap Lath" for "Beaver Gypsum Lath."

GYPSUM LATH ("PLASTER BOARD")—(a) Lath with Gypsum Lath (Plaster Board) all studs, joists, etc., and all furred masonry throughout all portions of the building specified to be plastered.

(b) All Gypsum Lath shall be Beaver Gypsum lath, ⅜ (or ½) in. thick. Nailing edges shall have bearing not less than ⅝ in. on studs, joists, etc., with horizontal joints in walls and joints at right angles with ceiling joists broken at each board and with vertical joints on opposite sides of partitions not on the same studs. Lath shall be nailed at every support with nails spaced 4 in. apart. For ⅜ in. lath use 1⅛ in., 13 gauge, ⅜ in. head nails. For ½ in. lath use 4d common nails.

(c) Wherever any gypsum lathed walls, partitions or ceilings abut unfurred masonry, secure strips of painted expanded metal lath extending at least 8 in. on to gypsum lath and 8 in. on to masonry. Strips shall be cut from lath weighing not less than 2.5 lbs. per sq. yd.

(d) All grounds for gypsum lath shall be set so as to provide ½ in. of plaster over the lath and will be furnished and installed as specified under Carpentry.

(Provisions for the furnishing and setting of all grounds should be made under Carpenter's Work.)

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BASIC SPECIFICATIONS—LATHING AND PLASTERING

5—CORNERS, ANGLES, ETC.

(a) Furnish and securely set at all external or projecting angles a stiff galvanized metal corner bead which is to run from top of base to ceilings, heads or beams, or to spring-lines in the case of any arches.

(If the Architect's experience warrants a preference for any particular corner bead, its name can be inserted. If it is desired to have chamfered or rounded corners, strike out reference to corner beads and insert a new paragraph accordingly—and add the "cornerite" of metal lath mentioned in the following paragraph (b).)

(b) In all vertical internal or re-entrant angles and in all angles between ceilings, soffits, and walls, partitions or furring, lightly attach, over the wood lath, "cornerites" made from strips of painted expanded metal lath cut 12 in. wide from sheets weighing not less than 2.2 lbs. per sq. yd. and bent into the shape of an "L" 6 in. on each side. "Cornerites" shall be fastened along each edge but shall not be fastened in the corner. All these angles shall be plastered square and straight along each edge but shall not be fastened in the corner.

(This reinforcement of angles by metal lath "cornerite" will tend to prevent or reduce cracks in the angles. When gypsum lath is specified, change the words "wood lath" to "gypsum lath." When metal lath is specified, this paragraph should be stricken out.)

6—METAL BASE SCREEDS OR GROUNDS, PICTURE MOULDS, ETC.

Notes: Special metal, base screeds, grounds, moulds, coves; complete metal bases with or without electric wire-ways; metal picture moulds, chair rails, door and window trim, etc. Where such items are desired they should be included in the proper trade specification as required by local trade jurisdictions.

Where the installation of any or all of the above will cause special conditions or requirements in the plastering or lathing work, suitable paragraphs should be inserted in this section of the specification under a suitable heading.

7—MATERIALS AND MIXING

PLASTER—(a) All plasters shall be Certain-teed Brands:

Base Coat Plasters—Certain-teed, Beaver, Acme, Agatite.

Prepared Finishes—Certain-teed, Beaver.

Gauging Plasters, White—Satin Spar, Acme, Blue Rapids.

Gauging Plasters, Common—Certain-teed, Beaver, American "A" . . . as manufactured by the Certain-teed Products Corporation, or other plaster if approved in writing by the Architect.

(If other than the types of Certain-teed brands of plaster on which this specification is based are to be used, modify Par. (a) accordingly.)

SAND—(b) All sand for base coats shall be clean and sharp, free from alkali, salt or quicksand and from objectionable amounts of loam or clay and shall be graded from fine to coarse, and when dry, all shall pass a No. 4 sieve, not more than 10% by weight shall be retained on a No. 8 sieve; not less than 70% by weight shall be retained on a No. 50 sieve, and not more than 5% by weight shall pass a No. 100 sieve. These sieves shall meet the specifications given in the Bureau of Standards' Standard Screen Scale. (See American Society for Testing Materials Specifications for Gypsum Plastering Sand, Serial Designation C35.)

(If any sand float finish is to be included (see Finishing Coat, Pars. 8 (b5) and (b5a)), the sand for this coat should be specified in paragraph above.)

MIXING—(c) All plaster shall be mixed with clean water in clean, tight boxes and in accordance with best local practice, the intent of these specifications, and the directions of maker on file in office of the Architect.

(Mixing and the importance of clean water and directions of the market is of vital importance to good work.)

8—PROPORTIONS AND APPLICATION

The specification below is for plaster of the regular thickness of the grounds applied in three coats.

In some parts of the country and under certain conditions, plaster is applied to the thickness of the grounds in two coats. Provision is therefore made at the end of this Section 8 for such plastering under the heading "Two-coat Work."

THREE-COAT WORK

ON GYPSUM LATH—(a) **First or Scratch Coat**—Shall be one part fibered plaster, to not more than two parts, by weight, of dry sand.

(b) The lath shall not be wetted before plaster is applied. First coat shall be thoroughly applied and the plaster worked well into the joints and the surface shall be scratched or scored to provide a bond for the second coat.

(c) **Second or Browning Coat**—Shall be one part plaster, fibered or unfibered, to not more than three parts, by weight, of dry sand.

(d) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be straightened, keeping back sufficiently from the grounds to allow for finishing coat and the surface shall be broomed or otherwise roughened to receive the finishing coat.

ON WOOD LATH—(a1)—**First or Scratch Coat**—(Same as Par. (a) above for Gypsum Lath.)

(b1) Wood lath shall be thoroughly wetted 12 to 24 hours before plastering is started. First coat shall be applied with sufficient pressure to fill all spaces between lath and obtain good key, leaving a light coat over the lath, and the surface shall be scratched or scored to provide a bond for the second coat.

(c1) **Second or Browning Coat**—(Same as Par. (c) above.)

(d1) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be applied with strong pressure and straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

ON METAL LATH—(a2) **First or Scratch Coat**—(Same as Par. (a) above for Gypsum Lath.)

(b2) First coat shall be applied with sufficient pressure to fill all meshes and obtain good key, leaving a light coat of plaster over the lath and the surface shall be scratched or scored to provide a bond for the second coat.

(c2) **Second or Browning Coat**—(Same as Par. (c) above for Gypsum Lath.)

(d2) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be applied with strong pressure and straightened, keeping back sufficiently from the grounds to allow for finishing coat and the surface shall be broomed or otherwise roughened to receive the finishing coat.

ON MASONRY—(a3) **Base Coat**—Shall be one part plaster, fibered or unfibered, to not more than three parts, by weight, of dry sand.

(b3) The surface of all unfurred brick, hollow tile or concrete block walls shall be wetted before plastering is begun when necessary to kill excessive suction. The plaster shall be applied to a thickness of ⅝ in. beyond the wall face in two operations. A thin layer shall first be applied with strong pressure to secure a good bond and shall be followed immediately with a second layer which shall be straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(Provision is made in the above specification for plastering on rubble masonry or on poured concrete. The first, it is presumed, will never be done without furring and the latter is covered in the following paragraphs.)

WOOD LATH AND LATHING—(a1) Lath with wood lath all studs, joists, etc., and all wood furred masonry walls throughout all portions of the building specified to be plastered.

(In cases where any masonry is to be plastered direct or where exterior walls are entirely of frame, paragraph (a1) above or in the specifications for "Gypsum Lath" or "Metal Lath" should be modified accordingly.)

(b1) Wood lath shall be of good merchantable quality, non-staining, and free from loose knots. All lath shall be spaced not less than ¼ in. nor more than ⅜ in. apart and shall be laid at right angles to supports. All ends of lath shall have solid bearing and all lath shall be well nailed to each support with 3d lathing nails. A space of ¼ in. shall be left between abutting ends of lath. Joints shall be broken not more than every seven laths. No lath shall be carried through from one room to another.

(In some cases this specification for wood lath may not be considered sufficient and the Architect should revise paragraph (b1) in accordance with the Standard Grading Specifications issued by the Lumber Manufacturers Association functioning in the locality where the work is situated.)

(c1) Over any heat pipes concealed in walls or partitions furnish and install strips of gypsum lath at least ¼ in. thick or painted expanded metal lath or wire lath well secured, with good bearing, at nearest supports. Wherever any wood-lathed walls, partitions or ceilings abut unfurred masonry, secure strips of painted expanded metal lath extending at least 8 in. on to wood lath and 8 in. on to masonry. Strips shall be cut from lath weighing not less than 2.5 lbs. per sq. yd.

(In some localities it is customary to specify the lathing-in of heat pipes as a part of the heating contractor's work, in which case provide accordingly and modify this paragraph. When gypsum lath or metal lath is specified, this paragraph should be stricken out.)

(d1) Over the heating plant in basement and extending 3 ft. beyond its outlines, and of smoke pipe to wall, furnish and securely install gypsum ⅜ in. thick or painted expanded metal lath or galvanized wire lath weighing not less than 3.0 lbs. per sq. yd.

(The Committee on Building Construction of the National Fire Protection Association recommend the protection of woodwork over heating apparatus and over fuel storage (other than anthracite). The above paragraph is suggested as a minimum.)

(e1) (See note following.)

(For other uses of incombustible lath, if any are desired to replace wood lath in special locations, describe in this space.)

(f1) All grounds for wood lath and lathing shall be ¾ in. thick and will be furnished and installed as specified under Carpentry. Thickness of grounds includes the thickness of the lath.

(Provisions for the furnishing and setting of all grounds should be made under Carpenter's Work.)

METAL LATH—(a2) Lath with metal lath, all wood studs, joists, etc., back of all tile wainscoting (or walls), and all furred masonry walls (or all steel studs, beams, metal furring, metal suspended ceilings, etc.) throughout all portions of the building specified to be plastered, including all arches, beams, cornices, etc.

(b2) **For Walls, Furring and Partitions and Wood (or Steel) Supports Spaced 16 in. or Less on Centers**—Painted expanded metal lath weighing not less than 2.5 lbs. per sq. yd. shall be used.

For Ceilings with Wood Joists (or Wood Furring) (or Metal) Spaced 16 in. or Less on Centers—Painted expanded metal lath weighing not less than 3.0 lbs. per sq. yd. shall be used.

For Ceilings with Wood Joists, Rafters or Collar Beams (or Wood Furring) (or Metal Furring) Spaced 24 in. on Centers—Painted expanded metal lath of the rib type weighing not less than 3.5 lbs. per sq. yd. shall be used.

(c2) Metal lath shall be applied with the long dimension of the sheet across the supporters. Sheets shall be lapped at sides not less than ½ in. and at ends not less than 1 in.

(d2) Sheets shall be attached to wood supports by not less than 6d nails or by 1¼ in. No. 14 gauge wire staples; either of these shall be driven to a penetration of not less than ⅞ in. and be spaced not to exceed 6 in. on centers. Nails shall be driven on a slant, alternating the slant of adjacent nails, and be bent over at least one strand of the lath.

Note: For fireproof building the following paragraph (d2a) should be used instead of paragraph (d2).

(d2a) Sheets shall be wired to all metal supports at intervals not exceeding 6 in., with not less than No. 18 gauge galv. soft annealed wire.

(e2) All horizontal laps of sheets on sidewalls shall be tightly tied at least once between supports, and side laps on ceilings shall be tied twice between supports with No. 18 gauge galvanized soft annealed wire.

End laps shall generally occur only over supports; if between supports, sheets shall be securely laced every 6 in. with wire just described. At internal angles the lath on one wall shall be extended on the adjoining wall not less than 15 in. beyond the corner (to the nearest support).

(f2) Wherever any walls, partitions or ceilings abut unfurred masonry, the metal lath shall be extended at east 6 in. on to the masonry and be well secured at the edges into the joints.

(g2) All grounds for metal lath shall be ¾ in. thick and will be furnished and installed as specified under Carpentry.

(Provisions for the furnishing and setting of all grounds should be made under Carpenter's Work.)

OTHER LATHING BACKGROUNDS—Various types of wire meshed materials and wood, with and without paper backgrounds, and other special patented lathing materials are on the market. No attempt is made to provide for these in this specification. When their use is considered, the manufacturer's data should be consulted.

MASONRY SURFACES—Provision should be made under "Mason's Work" for all joints to be rough struck in brick, hollow tile, gypsum, or concrete block walls which are to be plastered direct.

(a3) The surfaces of all unfurred masonry to be plastered shall be brushed clean with a wire brush and shall be free from oil, grease, soot or projecting mortar.

(b3) Any low places shall be filled out and any unevenness of walls shall be straightened with unfibered plaster ahead of the base coat.

(c3) All grounds for brick, hollow tile and concrete block walls shall be ⅝ in. thick, and ½ in. thick for gypsum partition tile. Grounds will be furnished and installed as specified under Carpentry.

(When any of the masonry mentioned above is not to be used in the building specified, the reference to it may be stricken out.)

ON POURED CONCRETE—

All concrete surfaces which are to be plastered, should be put in condition to receive and retain the plaster coats.

(a4) All concrete surfaces to be plastered shall be treated as follows: Remove with a wire brush all dust and loose particles. Grease, oil or efflorescence shall be washed off with a solution of one part of commercial muriatic acid to four parts of water, and the surface so treated, washed again with clean water.

(b4) Smooth and dense surfaces shall be hacked so as to provide a rough base or background for the plaster. Plastering upon smooth concrete surfaces, which are first covered with so-called waterproof paints or compounds will not be allowed.

(c4) **Base Coat** — Shall be Certain-teed or Beaver Concrete Bond Plaster used neat with only the addition of water. The base coat shall consist of one or more thin coats sufficient to straighten the walls and ceilings and shall be applied with great pressure to secure a good bond. If necessary to apply in two coats, double back with the same material. The plaster shall be not less than ⅛ in. nor more than ⅜ in. in thickness, exclusive of the finish coat. The surface of the base coat shall be broomed or otherwise roughened to receive the finishing coat.

(If Bond Plaster is to be used as specified above, revise Par. 7 (a) to include the name of manufacturer and brand.)

Finishing Coat—(a5) Smooth White Finish shall be one measure of Gypsum Gauging Plaster to not more than three measures of perfectly slaked fresh burned plasterers' lump lime putty or standard hydrated finishing lime putty thoroughly and uniformly mixed.

Certain-teed

If it is desired, a prepared gypsum, finishing plaster may be used for the smooth white finishing coat, in which case substitute the following paragraph and revise Par. 7 (a) accordingly.

(a5a) Smooth White Finish shall be Certain-teed or Beaver Prepared Trowel Finish Plaster mixed to the proper consistency with clean water only.

(b5) Finishing coat shall be applied throughout the building except behind base and any place under Exceptions in Par. 2 (d) and shall be smooth white finish troweled to a dense, true surface.

Note: If "Sand Float Finish" is desired in some locations instead of "Smooth White", add one of the following paragraphs after, at end of Par. (b5), noting the exceptions and giving the locations.

(b5a) Sand Float Finish shall be four parts Gypsum Cement Plaster unfibered, one measure of perfectly slaked fresh burned plasterers' lump lime putty or standard finishing hydrated lime, and five measures of clean, sharp sand.

(b5b) Sand Float Finish shall be Certain-teed or Beaver Sand Float Finish Plaster mixed with water only.

(c5) (See note following.)

Note: This specification does not contemplate that colored, textural or special effects will be required as a finish in any portion of this building. If so, insert here the required paragraphs giving the location and description.

(d5) Finishing coat shall be applied when the base coat is set firm and hard and nearly dry. The surface of the base coat shall be sprinkled with water before the finish coat is applied when necessary to kill excessive suction.

(e5) All finishing coats throughout shall be applied and finished in the most workmanlike manner and shall be left plumb or level and true and even planed, free from trowel marks, blotches and without joints showing.

(f5) All finished plastering shall be protected from wind until set. In freezing weather, the contractor shall arrange with the General Contractor that plastering shall be protected from frost until set hard and thoroughly dry.

(In windy, hot, dry weather, openings should be screened but not closed. In all clear weather after plastering has set, doors and windows should be kept open as fully as possible.)

TWO-COAT WORK

For cautionary notes regarding "Two-coat Work" and its undesirability on certain backgrounds, read the following:

Circular No. 151 of the Bureau of Standards entitled "Wall Plaster, Its Ingredients, Preparation and Properties" states in part regarding two-coat work:

"'Double-up', 'laid-off', or 'laid-on' work, as it is variously called in different localities, means the application of the scratch and brown coats together, or at least without permitting the usual time to lapse between them. The scratch coat is applied in the way specified above, but it is not permitted to harden, nor is its surface scratched. The application of the brown coat is started immediately after finishing the application of the scratch coat. This method is obviously cheaper than straight three-coat work, but certain precautions are essential to its successful use. The brown coat must be applied before the hardening of the scratch coat has progressed far enough to produce a glazed surface. The backing must be sufficiently rigid of itself that it will not yield under pressure of the trowel, and it will not sag under the weight of the combined coats. If it deflects to any appreciable extent, the keys which hold the scratch coat to it will probably be broken, and if it sags it will be found extremely difficult to bring the brown coat out to a true plane surface. For these reasons, doubled-up work shall not be applied to metal lath. Its use on wood is not recommended, particularly if the plaster is to be 7/8 in. thick. On masonry backings the use of doubled-up work is largely a question of application—if the plasterer succeeds in making the plaster stick and is able to form a true plane surface, the work will be satisfactory. This depends on the thickness of the plaster and the nature of the backing. It is difficult to apply a doubled-up coat of a thickness greater than 5/8 in. The great suction exerted by gypsum tile makes the application of doubled-up work easy; on clay tile it is almost impossible."

ON GYPSUM LATH—

For two-coat work on "Gypsum Lath", specify as follows, substituting the proper paragraphs as noted:

(a6) (Same as Par. 8 (a).)

(b6) The boards shall not be wetted before plaster is applied. Base coat shall be applied in two operations—a thin layer of plaster shall first be spread under pressure over the boards and the plaster worked well into the joints. This shall be immediately followed with a second layer which shall be straightened to a true and even plane, keeping back sufficiently from the grounds to allow for the finishing coat. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(c6) **Finishing Coat**—(Same as Pars. 8 (a5) to (f5).)

ON WOOD LATH—

If two-coat work on wood lath is desired, specify as follows, substituting the proper paragraphs as noted:

(a7) (Same as Par. 8 (a).)

(b7) Wood lath shall be thoroughly wetted 12 to 24 hours before plastering is started. Base coat shall be applied in two operations—a thin layer of plaster shall first be applied with sufficient pressure to fill all spaces between lath and obtain a good key and shall be followed immediately with a second layer which shall be straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(c7) **Finishing Coat**—(Same as Pars. 8 (a5) to (f5).)

ON MASONRY—(a8) For two-coat work on brick, hollow tile or concrete block walls, same as Pars. 8 (a3) and (b3).

(b8) **Finishing Coat**—(Same as Pars. 8 (a5) to (f5).)

9—ARCHES, BEAMS, CORNICES, MOLDINGS, ETC.

(a) Wherever any arches, beam effects, corbels, etc., are indicated on the drawings, the same shall be fully formed with plaster in strict accordance with detailed drawings. All to have sharp arrises.

(If arches, beams, etc., are to be included, they will of course, be specified to be built or formed by the Carpenter for wood frame construction. If not, they should be built of metal lath and fully described in Par. 4 (a2). If more ornamental features are intended, amplify. If not to have sharp arrises, change to chamfering or rounding.)

(b) Wherever any cornices, moldings or other ornamental plastering features are shown or indicated on the drawings, they shall be run straight and true, as detailed, with Sunflower or Acme Molding Plaster, or may be pre-cast, securely set and anchored without joints showing. All moldings and lines shall make true intersections and be neatly mitered at angles. The girths of cornices and sizes of molds shall be as follows:

(Here allocate and describe.)

(If no cornices, moldings, etc., are to be included, strike out this section in specification. If to be included, and if large enough in girth or size to require forms, mention the same for cornices, beams, etc., in Carpenter's Work or Metal Furring and Lather's Work.)

10—BLANK HEADING

(This space is suggested so that the Architect may include provisions for plastering of window jambs, or reveals where not of wood, any special plastering or finishing in toilet rooms, bathrooms, kitchens or laundries, etc., the plastering of any outbuilding, any "water-proofing," etc., and clauses regarding guarantee or conduct of work or such other special items as may apply to the particular structure in hand which are not provided for under other headings.)

11—PATCHING AND COMPLETION

(a) The contractor for plastering shall at all times keep the premises clean of loose mortar and rubbish resulting from his work and shall neatly patch or otherwise make good any damaged plaster after the various trades have left the building.

(It has been found in practice and as a matter of justice that both patching and waste can be avoided if provision is made for the plastering contractor to be paid for patching by the trade causing the damage. This paragraph can be amplified as desired by the Architect to conform to his experience or trade custom of the locality.)

(b) The whole of the work shall be completed to the satisfaction of the Architect and all shall be left perfectly straight, true and level or plumb, free from waves, cracks, blisters and defects of any kind, or be replaced until it is.

12—STUCCO

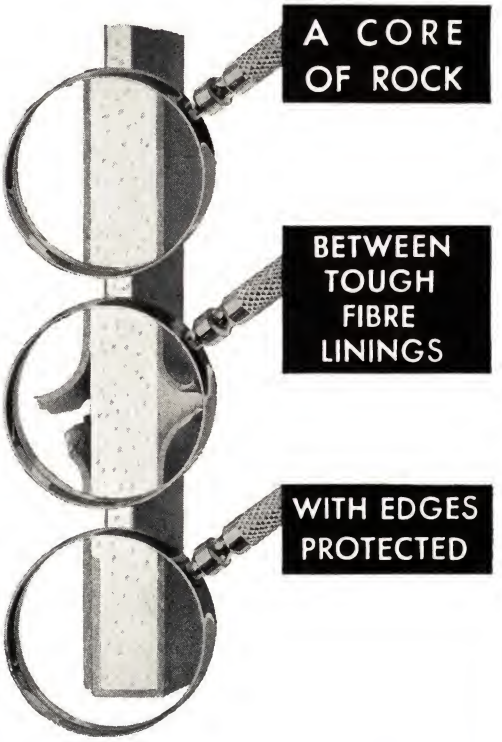
(If any exterior plastering is to be done, here enumerate and describe.)

(For exterior plastering, or Stucco, the Specification for Lime Stucco of the National Lime Association and for Cement Stucco of the Portland Cement Association will be found very useful.)

GYPSUM PRODUCTS MANUAL

GYPSUM WALLBOARD AND SHEATHING

Bestwall Gypsum Wallboard



Bestwall Gypsum Wallboard comes in smooth, solid sheets of special gypsum mix molded between sheets of long fibered, heavy paper. It is a closed-edge board which comes in ¼ in., ⅜ in., and ½ in. thicknesses, 32 in., 36 in., or 48 in. in width, and 4 ft. to 12 ft. in length.

Bestwall, the Original Gypsum Wallboard, is useful for walls, ceilings, and partitions in new construction, remodeling, or repairing. It may be sawed and nailed like lumber and may be nailed to studs and joists or over old or new construction. It will not warp or buckle and is vermin-proof, resistant to moisture and climatic changes. When desired, attractive paneling may be applied, the wood strips being placed so as to cover the joints.

Recessed Edge—Bestwall Gypsum Wallboard is available with a recessed edge which permits construction of smooth walls without noticeable joints. The invisible joints are obtained through the use of Bestwall Joint System.

Fire-Resistant—Bestwall Gypsum Wall Board is highly resistant to fire. In tests it has withstood for 15 minutes the heat of a Meeker Burner (1200° to 1500° F.) applied to one face, with only slight damage to the opposite surface.

Exclusive Advantages—Bestwall Gypsum Board has two exclusive features—Nail-Marking and a method of packing which assures the delivery of sheets with a clean face. Nail-Marking saves at least 10% of the application time by eliminating the need for measuring and ruling to indicate where to nail to hit studs. A row of inconspicuous dots shows the workman where to find studs on either 16 in. or 24 in. centers.

The two outer dotted lines are spaced to indicate the stud center on 16 in. spacing. The center line spots the spacing when the studs are 24 in. on center. The dots are spaced 3½ in. apart. In nailing on side walls, space nails 3 dots apart or 10½ in. and on ceilings 2 dots apart or 7 in. The dots are heavy enough to be seen but do not mar the board in any way.

Preparations for Applying Bestwall Gypsum Wall Board

Framing—Studs and joists should be accurately spaced 16 in. on centers and set straight and true. All bowed or warped joists or studs must be replaced or straightened.

Blocking should be provided around all door, window, or other openings to receive the ends of the boards.

Headers—All four edges of the boards must be nailed solid. Headers or blocking of 2 in. x 4 in. must be cut in between joists or studs for the ends of all boards.

Corner Beads—These should be installed on all external angles of walls, the corner bead to be nailed to the framing so that the edges of the board, when applied over it, shall finish flush with the corner bead.

Beaver Gypsum Sheathing

This is an ideal material for exterior sheathing on frame buildings under siding or clapboards, shingles, brick veneer or stucco. It is applied with the length of the sheathing at right angles to the studs.

It is ½ in. thick with a solid fire-proof core of gypsum encased in a tough, water-resistant fiber covering. The long edges are V-tongued and grooved which stiffens the unsupported edges when installed. The joints do not open up as gypsum sheathing does not shrink or expand. This gypsum sheathing has given ample proof of its structural bracing strength in comparison with diagonal wood sheathing.

Its Advantages—It is permanent and does not disintegrate as the outer fiber surface is especially treated to resist moisture. It can be sawed and nailed like wood sheathing. Shingle lath should be applied over the gypsum sheathing when shingles are used.

Fire-proof—It does not burn or support combustion, and resists the transmission of heat.

Sizes—24 in. wide by 6 ft. 8 in. and 8 ft. 0 in. long.

Certain-teed

THERE'S A CERTAIN-TEED PLANT NEAR YOU

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THE Gold Bond HANDBOOK

ON RELATED PRODUCTS
FOR WALLS & CEILINGS

NATIONAL GYPSUM CO.—GENERAL OFFICES, BUFFALO, NEW YORK 1938

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BY

NATIONAL GYPSUM COMPANY

(Prepared by Sweet's Catalog Service)

PRINTED IN U.S.A.

THE Gold Bond HANDBOOK

ON RELATED PRODUCTS FOR WALLS AND CEILINGS

Manufactured by National Gypsum Company and sold through 10,000 dealers in the United States . . . A complete service in related wall and ceiling building materials controlled and guaranteed by one company.

DISTRICT SALES OFFICES

NEW YORK, N. Y.
2149 Graybar Building

CHICAGO, ILL.
1419 Conway Building

BOSTON, MASS.
701 Consolidated Gas Co. Building

ST. LOUIS, MO.
3605 Laclede Avenue

PHILADELPHIA, PA.
2302 Lincoln-Liberty Building

MINNEAPOLIS, MINN.
700 National Building

DALLAS, TEXAS
603 Burt Building

ATLANTA, GA.
528 Hurt Building

LOCATION OF PLANTS

PORTSMOUTH, N. H.	LUCKEY, OHIO
NATIONAL CITY, MICH.	ORANDA, VA.
MOBILE, ALA.	ROTAN, TEXAS
AKRON, N. Y.	NEW YORK, N. Y.
NILES, OHIO	CLARENCE CENTER, N. Y.
YORK, PENNA.	FORT DODGE, IOWA

NATIONAL GYPSUM COMPANY

GENERAL OFFICES, BUFFALO, N. Y.

THE GOLD BOND HANDBOOK

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A Handbook of Gold Bond

WALL AND CEILING BUILDING MATERIALS

Gold Bond Macoustic Acoustical Plaster provides noise reduction and acoustical correction. Installations have been made in the finest buildings in the land including Theatres, Auditoriums, Churches, Hospitals, Schools, etc.

NATIONAL GYPSUM COMPANY through its 10,000 dealers, supplies under the name "Gold Bond," a full line of guaranteed building products comprising practically every type of material required for approved wall and ceiling construction and interior finish.

Included are gypsum wallboards in plain, wood grain and tile finishes, five kinds of lath, base and finish plasters, acoustical plasters, lime, casein paint, textures, hardboards, and a complete line of aluminum foil, rock-wool and fibre insulation products.

Eight district sales offices plus a large corps of field representatives, specially trained in wall and ceiling construction, offer constant sales co-operation to Gold Bond Dealers. And twelve modern plants, strategically located in the South, Central and Eastern portions of the country, insure the utmost in service.

In Buffalo, Gold Bond maintains a large staff of wall and ceiling experts who are constantly at work on the development of new products. What is perhaps the most important contribution to improved wall and ceiling construction has just been announced by National Gypsum Company, namely, The "Floating Wall" System, which promises to completely revolutionize old-time methods. It is patented and exclusively Gold Bond.

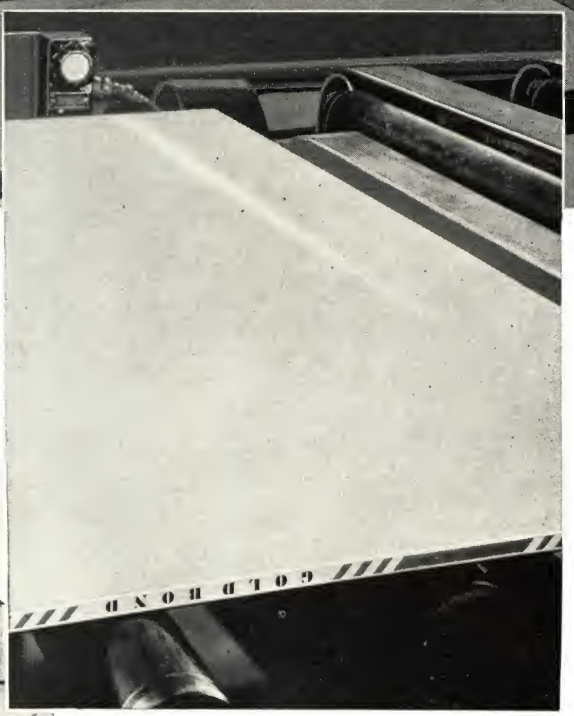
(in circle) Gold Bond Gypsum Wallboard, because of its solid gypsum core, lays perfectly flat and will not expand or contract.

The Gold Bond "Floating Wall" System employs a new, patented lath-nail to build walls and ceilings that are free from rigid attachment to the framing members.

With the "Floating Wall" System in place, plastering is done in the regular way. The "Floating Wall" Nails every sixteen inches help to insure a uniform thickness of plaster.

TWO OF THE SEVEN MAMMOTH GYPSUM PLANTS

Gold Bond's Gypsum Wallboard Plant at Akron, N. Y., showing the 600 foot continuous strip of wallboard coming through and passing under the ironing belt.



(above) Note the streak of light on the surface of this panel. Another adaptation of the "electric eye." This modern device operates a mechanical cut-off, insuring accurate board lengths.

(left) National City, Mich., Plant. Insures quick service to Detroit and Chicago markets. Shipments also move cross-lake to Milwaukee and other Wisconsin points.

LIME AND GYPSUM PLANT AND LIME QUARRY

(above) Model Gold Bond Lime Plant at Luckey, Ohio, termed by experts the finest in the country. Constant laboratory supervision plus the most modern equipment, including automatically controlled furnaces, insure uniformity of quality.

At this plant is made a full line of lime products including Finish Lime, Mason's, Agricultural and Industrial Lime for chemical plants and for the manufacture of glass, steel, paper, etc.

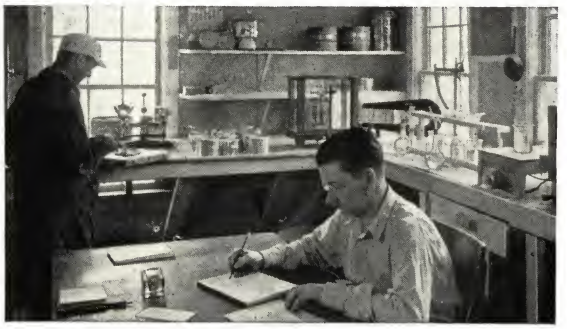
(below) Gold Bond's immense lime quarry at Luckey, Ohio, in the heart of the rich Ohio dolomite lime field. Ohio finish lime is known the country over for its purity, whiteness and all-around superior quality. Only the whitest rock taken from the quarry is used for Gold Bond Finish Lime.

(below) Rotan, Texas Gypsum Plant. A full line of gypsum products is manufactured at this mill including Gold Bond Board, Lath and Plaster. Takes care of dealer's needs in the South and Southwest . . . Many of the beautiful exposition buildings at the Texas Centennial were Gold Bond inside and out—all Gold Bond products being manufactured at this plant.

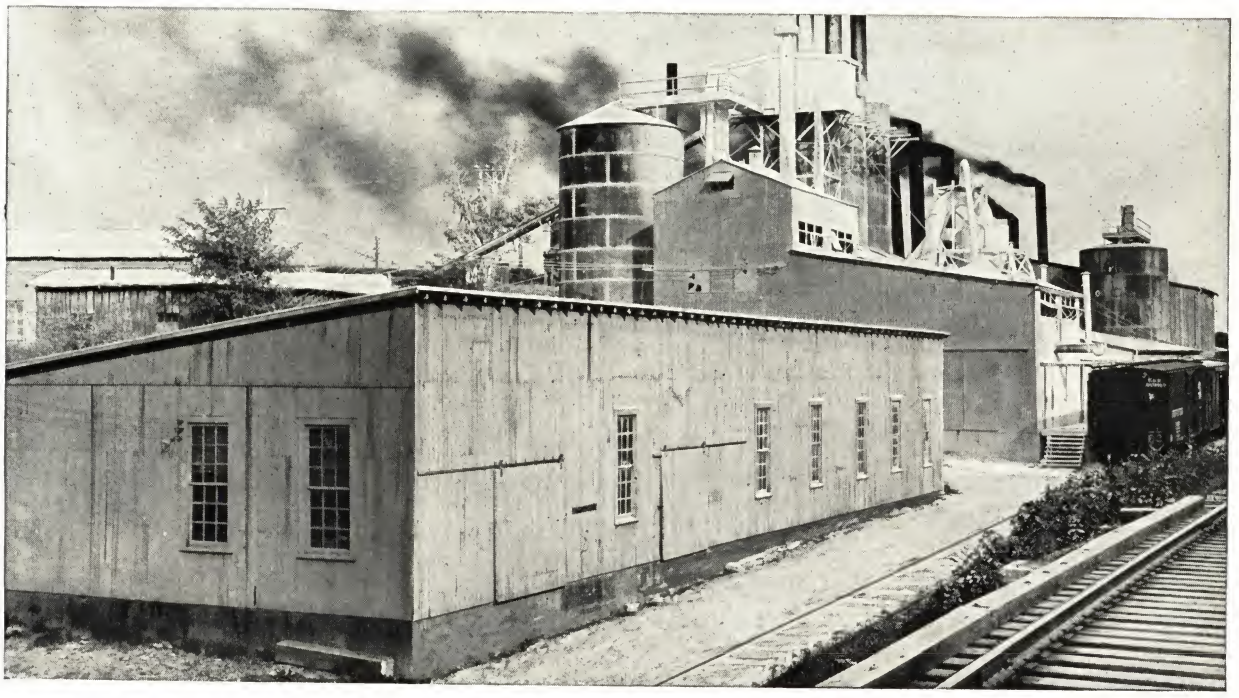
LIME PLANT AND RESEARCH LABORATORIES

(above) Lime Plant at York, Pa. One of the most modern in the country. Equipped with specially designed gas-fired kilns which produce a more uniformly burned product so vitally important in the manufacture of lime.

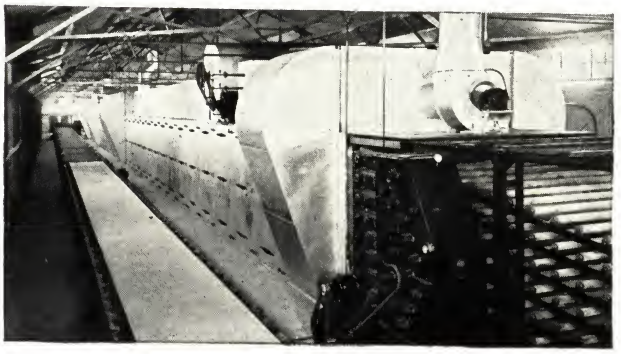
This plant specializes in the manufacture of high-calcium lime products for industrial and chemical purposes, used in the manufacture of paper, bricks, and steel products; for water softening and for dozens of other industrial uses.



The main Research Laboratory in Buffalo (left) and typical plant laboratories (above). At every Gold Bond plant, a completely equipped laboratory is maintained where samples of finished products are inspected and tested at the end of each run. Every bag of plaster and lime; every panel of wallboard must measure up to Gold Bond standards.



LIME, GYPSUM AND METAL LATH PLANTS

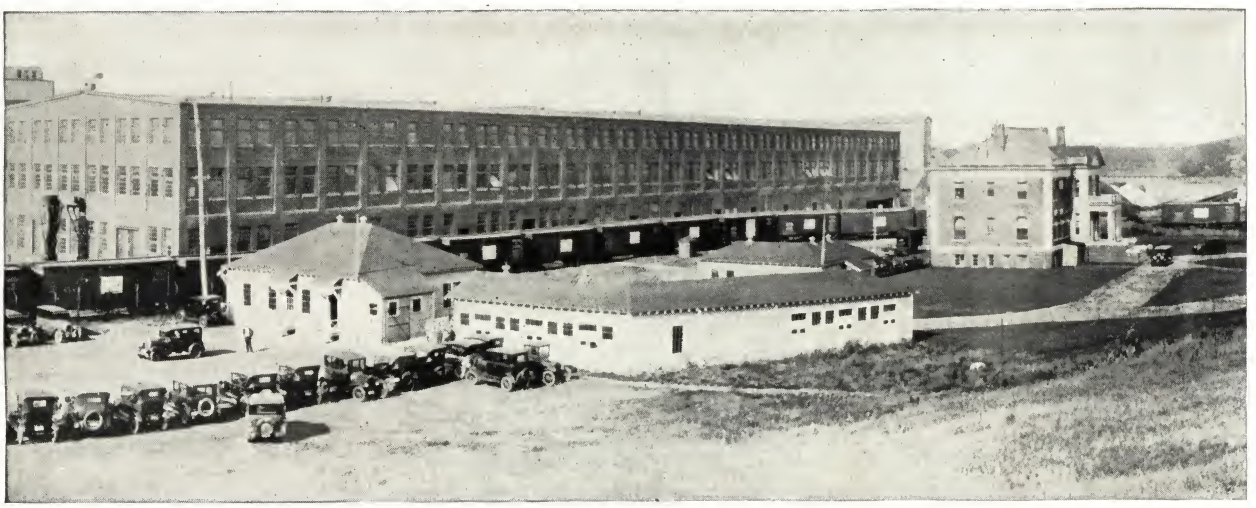


(above) Lime Plant at Oranda, Va. Limestone mined here and at the York, Pa., Plant excels in purity and high-calcium content. Oranda specializes in Agricultural and Spray Lime, also Mason's and Industrial Lime for Chemical uses.

(left) The new gas-fired wallboard dryer at the Fort Dodge, Iowa, Plant. A full line of gypsum products . . . plaster, wallboard, etc., is manufactured here to serve the Northwest and Pacific Coast.

(below) The Gold Bond Metal Lath Plant at Niles, Ohio. Here is made a complete line of Metal Lath, Corner Beads, Channels, Steel Basement Sash and other metal building accessories.

(above) Akron, N. Y., Gypsum Mill. Gold Bond is fortunate in having two mines and two plants in the heart of Western New York's rich gypsum deposit (Akron and Clarence Center, N. Y.) with an estimated 75 year supply of unusually pure gypsum rock.



NEW HAMPSHIRE AND BRONX GYPSUM PLANTS

(above) Gypsum Mill at Portsmouth, N. H. One of the largest in the Gold Bond group of plants. The complete line of Gold Bond Gypsum Products is manufactured here including Board, Lath, Plaster, Super-white Gauging and Moulding and Gypsum Partition Tile. Located within 60 miles of Boston and serves New England markets.

(below) Cargoes of select gypsum rock are unloaded at the New York City plant every few days. The immense traveling gantry unloading crane pictured here unloads a full cargo in 12 hours.

(above) New York City Plant. A huge gypsum mill almost within a stone's throw of Times Square. Ideally located for quick pickups by dealers in the Metropolitan area. Here is manufactured a full line of Gypsum Plasters, Super-white Gauging and Moulding, also paint products including Sunflex and Gold Bond Casein Paint, Cement Paint and Craftex.

SECTION ONE

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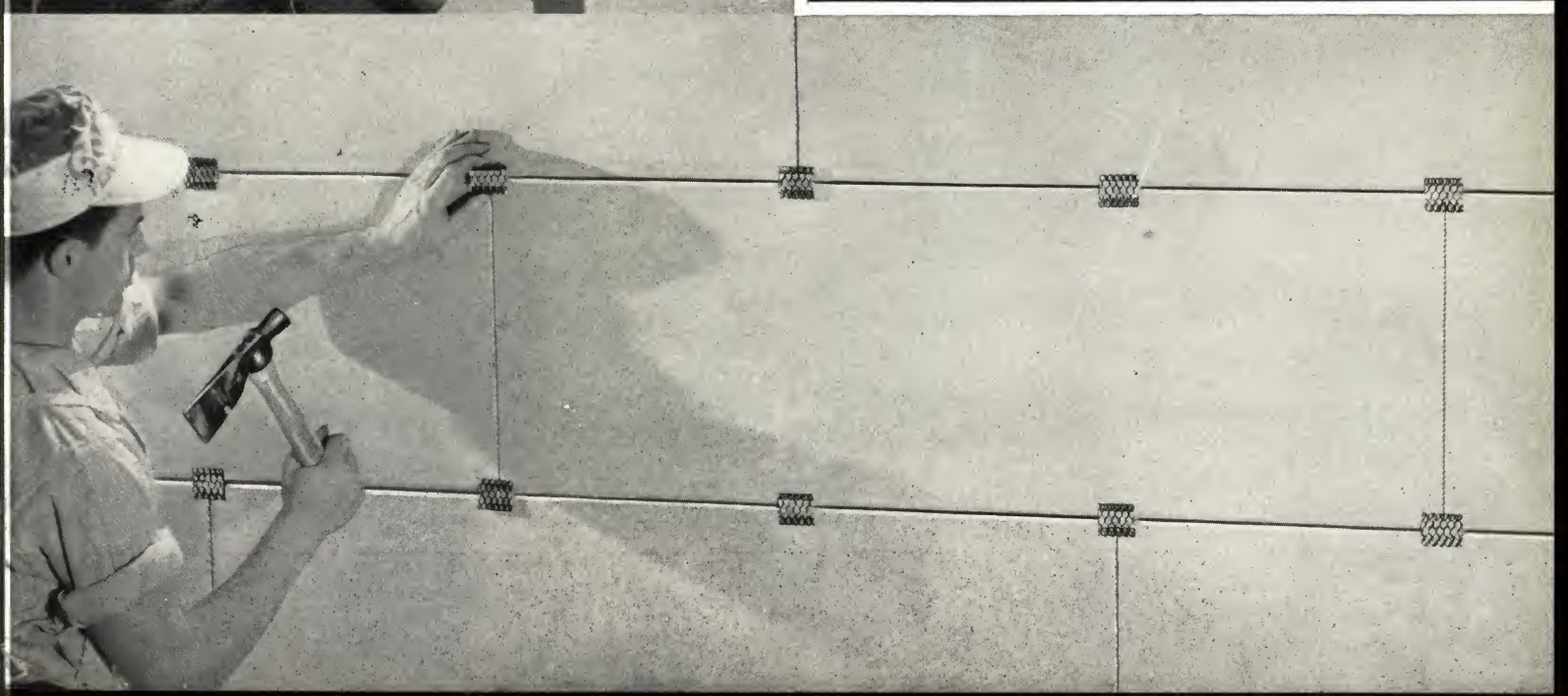
GOLD BOND GYPSUM LATH
With Aluminum Foil Insulation



GOLD BOND FIREPROOF GYPSUM LATH

The Modern Plaster Base with Core of Solid Gypsum Builds Stronger Walls and Ceilings

GOLD BOND GYPSUM LATH is made under the same exclusive patents as Gold Bond Gypsum Wallboard, the only difference being that the sizes are smaller and the gypsum core is encased in a heavy fibre sheet that bonds tightly with plaster. The long sides have closed edges and are round, as illustrated. The short ends are cut perfectly square.

Superior Bond to Plaster

The bond of plaster to Gold Bond Gypsum Lath is not dependent on mechanical keys but is obtained by the felting action of billions of gypsum crystals in the set plaster embedding themselves onto the surface of the Gold Bond Gypsum Lath during the setting action. Authoritative tests have shown this bond to be four times as great as any mechanical bond such as that obtained on wood lath, metal lath, etc.

Fireproof . . . Adds Structural Strength

The solid gypsum core of Gold Bond is non-inflammable and non-combustible. In repeated blow-torch tests, has demonstrated its ability to resist fire. Numerous testimonial letters have been received telling how effectively Gold Bond has withstood scorching flames and prevented the spread of fire by protecting the wood studs.

Won't Warp or Buckle—Saves Plaster Cracks

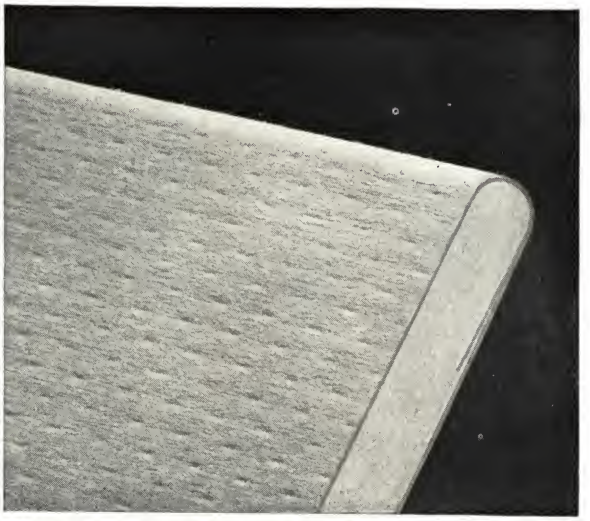
Gold Bond Gypsum Lath will not expand, contract, warp or buckle. One of the chief reasons for plaster cracking is the twisting or warping of the lath. This can't happen with Gold Bond as the rock-line panels lay perfectly flat and are not affected by dampness or climatic changes.

The strength and rigidity imparted to walls and ceilings by the use of Gold Bond Gypsum Lath adds considerably to the structural strength of the building as a whole. When covered with ½ inch of plaster, it makes a wall ⅞ inch thick . . . solid gypsum rock.

Cuts Labor Cost and Saves Plaster

With wood lath, spaces are left between the laths and much of the plaster goes into these spaces to form "keys." No "keys" are required with Gold Bond. The sturdy panels are butted together and *all* the plaster goes on the surface of the lath. This saving of plaster is considerable on a house of average size.

Application costs are cut, too, as the large panels of Gold Bond are applied much quicker than the narrow wood lath strips. Gold Bond saws like wood and can be nailed close to the edge without splitting.



Showing the distinctive indented surface of Gold Bond Gypsum Lath. The solid gypsum core is encased in this tough fibre covering.

Sizes and Thicknesses

⅜" Thick	16" x 32"	6 panels per bdle.	21⅓ sq. ft.
⅜" Thick	16" x 36"	6 panels per bdle.	24 sq. ft.
⅜" Thick	16" x 48"	6 panels per bdle.	32 sq. ft.
½" Thick	16" x 32"	6 panels per bdle.	21⅓ sq. ft.
½" Thick	16" x 36"	6 panels per bdle.	24 sq. ft.
½" Thick	16" x 48"	6 panels per bdle.	32 sq. ft.

Also made under the name Gold Bond Liner Board with non-indented surface. . . Thicknesses of ¼", ⅜" and ½". Sizes of 24" x 48", 32" x 36" and 32" x 48".

Gold Bond Gypsum Lath comes in handy bundles that are light and easy to handle. A bundle of 16" x 48" x ⅜" contains 6 panels and weighs about 43 pounds.

For Gold Bond Gypsum Lath with Aluminum Foil Insulation, see page 43.

GOLD BOND PERFORATED GYPSUM LATH

Embodies All the Advantages of Standard Gypsum Lath *Plus* a One Hour Fire Rating

Provides Fire Protection for Wood Frame Buildings

GOLD BOND PERFORATED GYPSUM LATH is standard lath with holes about the size of a nickel drilled through the panels. When the surface is plastered, enough of the plaster is forced through the perforations to form mushroom-like "keys" as pictured in the next column. Insures a double bond with plaster—the natural or chemical bond that occurs between the indented surface of the lath and the plaster, plus the mechanical bond provided by the "keys."

Official tests conducted according to regulations of the American Standards Association have shown Gold Bond Perforated Gypsum Lath to have qualified for a one hour fire rating, when plastered in the standard manner. This means that under normal conditions a fire will be confined to the room in which it originates for one full hour—long enough for fire apparatus to arrive.

Staggered Arrangement of Perforations Insures Greater Strength

As shown in the illustrations, the perforations are so arranged that there are not more than three holes across the width of the panel. This is strictly a Gold Bond feature and makes this lath the strongest of its type.

Other Advantages That Combine to Make This an Outstanding Plaster Base

In addition to its one-hour fire rating, Gold Bond Perforated Gypsum Lath offers these important advantages over old-style inflammable wood lath: It is moisture proof and unaffected by climate changes. Won't expand, contract, buckle or twist. The rock-like panels add greater strength so that the plaster walls and ceilings are better able to withstand structural strains. Homes in which this fireproof modern plaster base is used have an extra appeal to prospective buyers.

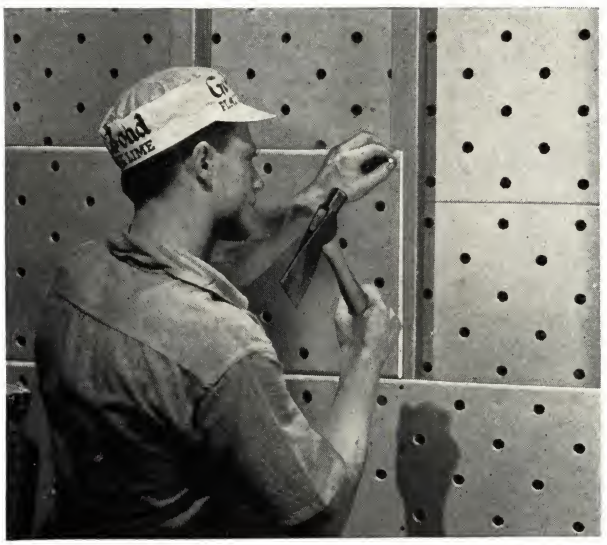
Application

Gold Bond Perforated Gypsum Lath is applied the same as standard gypsum lath . . . four nails to each stud—the nails to be 4 in. apart and ⅜ in. in from edge.

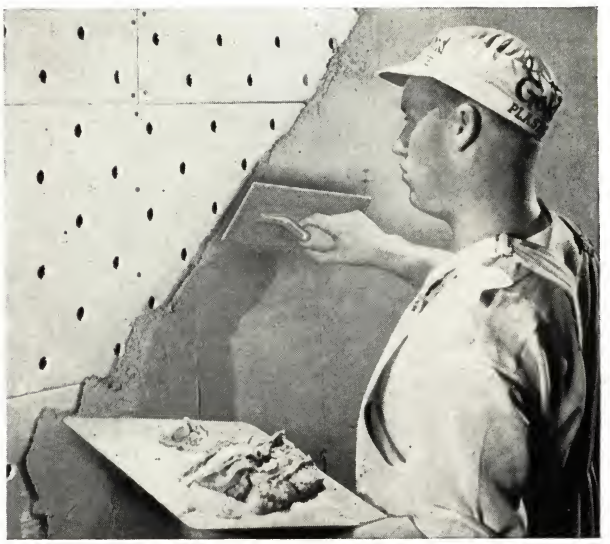
Size and Thickness

Gold Bond Perforated Lath is ⅜ in. thick and supplied in two sizes, 16x32 in. and 16x48 in. Packed 6 panels to a bundle.

Mushroom-like keys automatically form on the reverse side which grip the lath tightly.



Sturdy, rock-like panels of Gold Bond Perforated Gypsum Lath are applied quicker than wood lath and give wood framing the fire protection it needs.



As the plaster is trowelled on the workman can feel the perforations take hold. The small picture above shows what actually happens on the reverse side of the lath.

THE GOLD BOND "FLOATING WALL" SYSTEM

A New Patented System of Building Walls and Ceilings With "Free Action" to Withstand Structural Strains and Vibrations

Crackproofs . . . Reduces Sound Transmission . . . Fireproofs

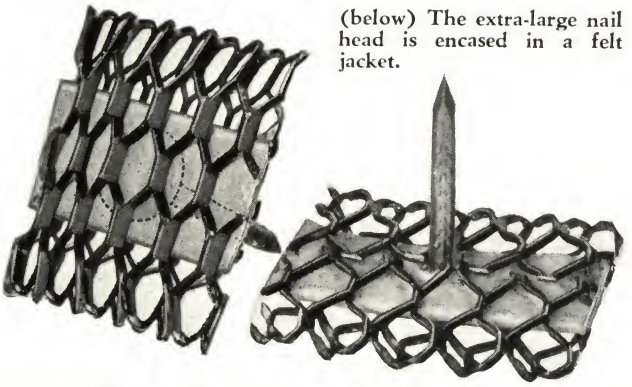
THE GOLD BOND "Floating Wall" System promises to completely revolutionize old-time methods. It provides the three all-important features of better wall and ceiling construction so much desired by every home builder but previously denied because of prohibitive cost.

The entire system is built around a new type of lath nail—the "Floating Wall" nail—a large headed nail, with the head encased in deadening felt in such a way as to provide resiliency . . . then reinforced with a double thickness of expanded metal . . . and the whole fabricated into one convenient unit for the lather. These special nails are used *between* the panels of Gold Bond Gypsum Lath, building an elastic "Floating Wall," free from rigid attachments to framing members. No plaster can touch the head of nail . . . no direct metallic contact between plaster and wood framing.

Provides New Features Never Before Obtainable in Moderately Priced Homes

The Gold Bond "Floating Wall" System insures these added advantages: (1) The danger of plaster cracks occurring from vibration or settling of the building is practically eliminated. (2) Sound transmission from one room to another is effectively checked. (3) One hour fire protection is provided for the wood framing. Heretofore, only hotels, fine buildings and the better class of apartments could boast of these features. Now they can be built into homes in every price class from a $2,500 cottage to a $60,000 mansion.

The "Floating Wall" Nail



(below) The extra-large nail head is encased in a felt jacket.

(above) Showing the felt covered by the metal reinforcing.

Added Cost Per Home Is Only a Few Dollars

No special skill is required to erect walls and ceilings by this new method. Lathers get the "hang" of it in a few minutes and if anything, labor cost is less. The only special material required is the "Floating Wall" nails. They cost a little more than standard nails but only four "Floating Wall" nails are used along edge of each 48 in. gypsum lath panel, as compared with sixteen nails per panel under the former method.

The "Floating Wall" Nails are driven *between* the panels of gypsum lath.

A typical "Floating Wall" job ready for plastering in the regular manner.

The Gold Bond "Floating Wall" System (Continued)

(1) Crackproofs

The chief reason for plaster cracks is the natural movement of framing members. There is no way to avoid this movement which in most cases is almost imperceptible. What the "Floating Wall" does is to get around the motion, so that although it still exists, it can do no harm to the plaster wall or ceiling.

Under normal conditions, with a completely rigid tie to the studs and joists, the twisting or warping of the framing members of even a few thousandths of an inch can result in plaster cracks. The "Floating Wall" system provides a resilient tie between the stud and the plaster itself. In effect the wall actually "floats" although strong and rigid and outwardly no different in appearance than a wall ot convention construction.

Months of careful testing in the Gold Bond Laboratories and systematic checking of actual jobs prove the "Floating Wall" system is crack resistant almost beyond belief. In a typical deflection test, a series of identical wall areas were built with wood lath, gypsum lath and the Gold Bond "Floating Wall" System; then plastered under standard specifications. At 1/8 in. deflection, the first crack appeared in the plaster over wood lath. Over Gypsum lath, cracks appeared at a deflection of 1/4 in. Deflection of 1 3/8 in. was needed to put a hair-line crack in the "Floating Wall." As every builder knows, deflection of 1 3/8 in. is almost inconceivable on an actual job.

(2) Reduces Sound Transmission

Walls built to resist passage of sound from one room to another have always been impractical in standard residential construction for the same reason that crack-proof walls and fireproof walls have been out of the question—high cost. Now, with the "Floating Wall" System, at little or no extra cost, all three features can be provided in one operation.

Sound Transmission loss is the measure of effectiveness that a wall, ceiling or floor area retards the passage of sound through the structure. This value is measured in decibels which are simply units of sound intensity in scale of audibility.

In a test made by the National Bureau of Standards in Washington, D. C., the "Floating Wall" received an average transmission loss of 47.6 decibles. This rating reflects the amount of sound that is actually lost or dissipated—enough to completely nullify the passage of ordinary conversational sounds through a wall partition from one room to another.

(3) Fireproofing

The chief function of "fire-proof" construction in residential building is its ability to retard the spread of fire for a reasonable length of time—long enough for fire apparatus to arrive.

To prove the effectiveness of the "Floating Wall" construction to withstand fire, tests were conducted in a leading laboratory in accordance with standard fire test specifications, A2-1934.

A standard wood frame partition approximately 16 ft. x about 10 ft. 4 in. was constructed with Gold Bond Gypsum Lath on each side, applied with "Floating Wall" nails. Each face was finished in the regular manner with 1/2 in. Gold Bond Plaster and lime putty. During the test a load equal to the allowable working load on the net area of the wood studs was applied, totaling about 15 tons for the 16 ft. wide partition.

At the end of the test this "Floating Wall" was shown to have qualified for a one hour fire rating under the American Standard Association regulations. This means that this type of construction can stop the spread of fire for at least one hour under normal conditions.

No special equipment needed except the "Floating Wall" nails which are sold by Gold Bond dealers along with the Gold Bond Gypsum Lath.

Lath is applied to ceilings the same as to side walls except an extra row of nails is used along the center of the panels. See detail drawing on next page.

Plastering is done in the usual manner. The expanded metal over the nail heads acts as extra reinforcing and insures uniform thickness of plaster.

NATIONAL GYPSUM COMPANY

The Gold Bond "Floating Wall" System (Continued)

STANDARD SPECIFICATIONS

Scope of Work

Gold Bond "Floating Wall" Plastering System shall be used in the following locations:

(LIST)

Examination of Framing Structure

Lather shall examine all framing for accuracy and proper nailing before applying lath. Openings shall be framed and electrical outlets properly located. Any defects shall be reported to architect and no lathing shall be done until such defects have been corrected.

Material

1. All materials shall be manufactured by the NATIONAL GYPSUM COMPANY and shall be delivered to the job in their original containers.

2. Lath—Gold Bond Gypsum Lath (16 in. x 48 in. x ⅜ in. thick).

3. Nails—Gold Bond "Floating Wall" nails shall be used exclusively.

4. Joint Reinforcing—Gold Bond Galvanized Corner Bead for external angles. Gold Bond 3 in. Cornerite for internal angles.

5. Plaster

a. *Base Coat*—Gold Bond Plaster (specify type).

b. *Finish*—Gold Bond Finish Lime with Gold Bond Superwhite Gauging Plaster. Alternates—Gold Bond Smooth Trowel Finish, Gold Bond Sand Float Finish, Gold Bond Color Texture.

Application

1. All walls, ceilings, and partitions as specified shall be covered with Gold Bond Gypsum Lath.

2. Lath shall be applied with back of lath facing stud, joists or furring, taking care to break joints. Vertical joints shall not occur opposite each other on same stud.

3. Lath shall be cut by scoring with a knife or hatchet and then break over a straight edge.

4. Lath (16 in. x 48 in.) shall be nailed to sidewalls with four "Floating Wall" nails driven in the joints between the lath at each stud. Ceilings shall be nailed as above together with one "Floating Wall" nail driven midway between folded edges at each joist or furring strip. Core of boards shall be ruptured with point of lather's hatchet where "Floating Wall" nails are not placed in between joints.

5. Any openings for outlet boxes, etc., shall be clean and neatly fitted to proper sizes and location.

Reinforcing Angles

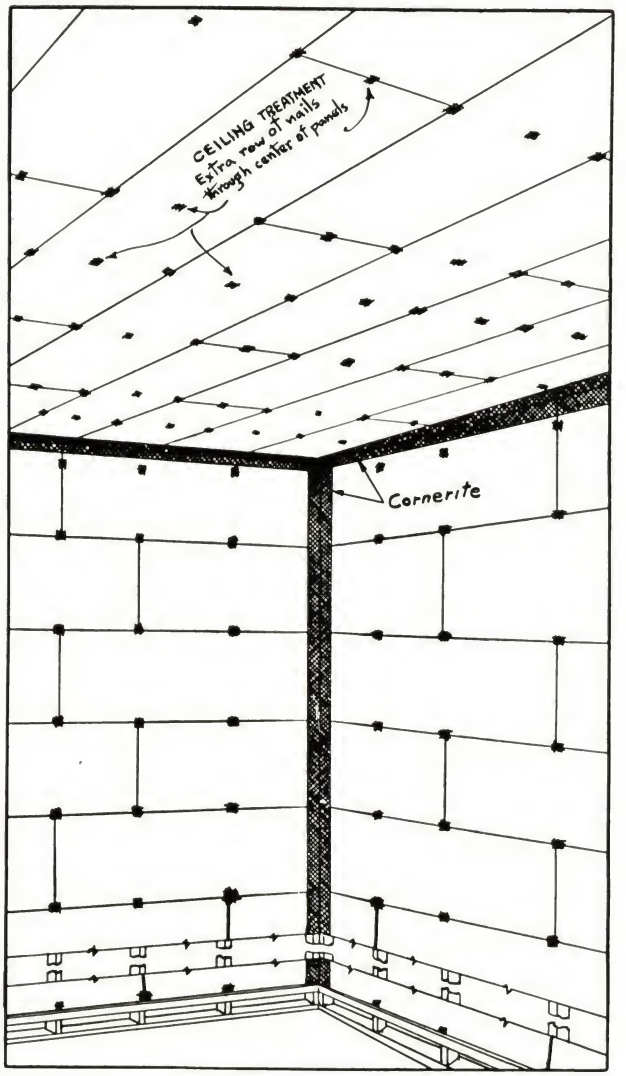
1. All internal angles of walls and ceilings shall be reinforced with Gold Bond 3 in. Cornerite and securely nailed.

2. All external angles shall be reinforced with Gold Bond Corner Bead (specify style) securely nailed.

Plastering

Follow standard specifications for plastering over gypsum lath. Plaster shall be full ½ in. thick.

Showing Wall and Ceiling Placing of Gold Bond "Floating Wall" Nails



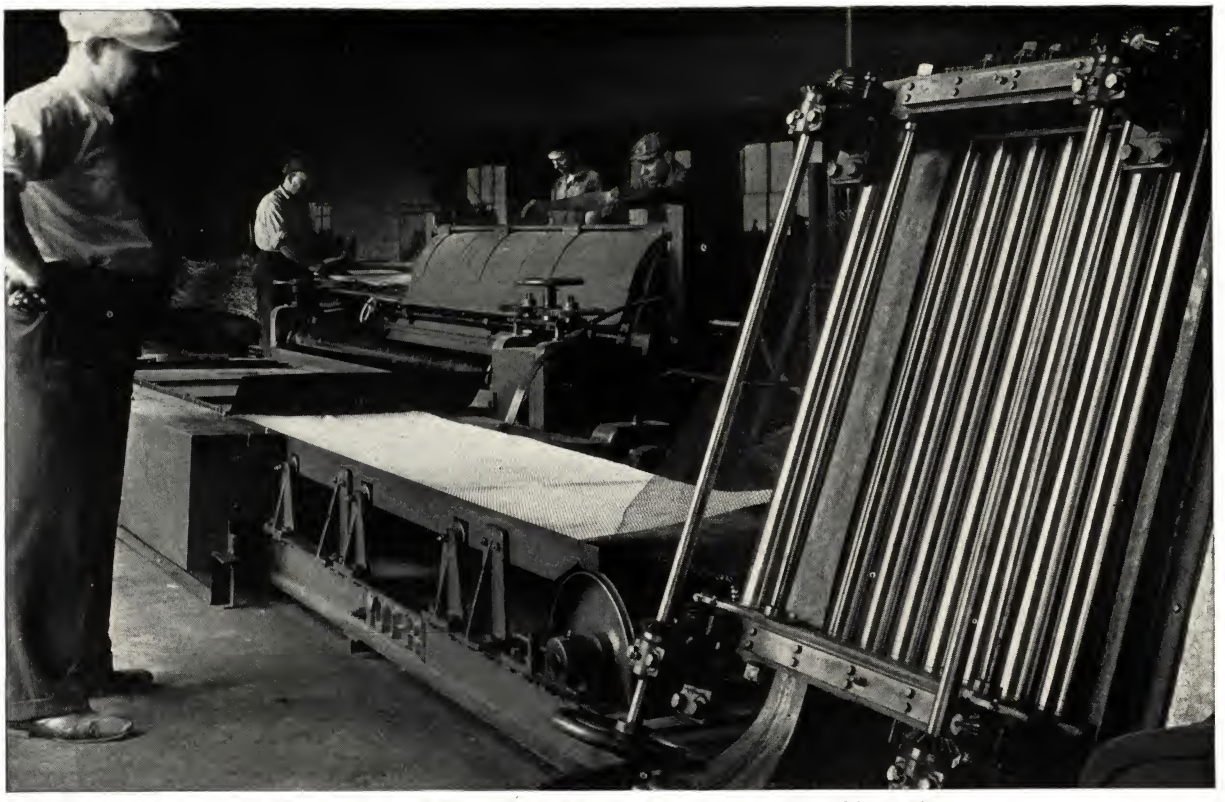
Wall Treatment—Four "Floating Wall" Nails are used along the 48 in. length of each panel of Gold Bond Gypsum Lath.

Ceiling Treatment—Same as for walls except there is an extra row of nails along the center of the lath panels (as indicated by arrows in above drawing), one center nail to each stud. The lath should be punctured with point of lather's hatchet to provide holes for the center nails.

Internal corners should be reinforced with 3 in. Gold Bond Cornerite. External corners should be covered with Gold Bond Corner Bead.

Patented and Exclusive to Gold Bond

The Gold Bond "Floating Wall" System is patented and available only through bona fide Gold Bond dealers . . . Upon request, National Gypsum Company will send, gratis, an illustrated book describing this system in detail.



Newest Type of Metal Lath Machine—in Use at Niles, Ohio, Plant

GOLD BOND METAL LATH PRODUCTS

Most Gold Bond Metal Lath Products Are Made From Steel Sheets Manufactured by the Open Hearth Process

NATIONAL GYPSUM COMPANY manufactures at its Niles, Ohio plant a full line of metal lath products and accessories.

For years metal lath, because of its unmatched strength and one hour fire rating for both walls and ceilings, has been invariably specified as the plaster base for buildings and the better class of homes. Lately it has come into common use for all types of residences including homes costing as little as $4,000. As one expert puts it, "Savings realized on repair and decorating bills over the years are every bit as important to owners of small homes as to those who own mansions."

The National Board of Fire Underwriters gives Metal Lath with gypsum plaster on wood studs a one hour fire rating; second only to reinforced concrete and above all others in resistance to earthquake and explosion shocks.

Only a few of the most commonly used products are pictured here, including the new Arch Corner Bead, an exclusive Gold Bond feature. Other products are: Corner Bead—5 in. Wing Expansion, Scalloped, Wide Flange, Standard Bull Nose and Bull Nose Expansion. Base Beads—Curved Point and Expansion Flush, Corner Bead and Channel Clips, Hot Rolled Channels, Galvanized Tie Wire, Pencil Rods, Coal Doors and Steel Basement Sash.

An illustrated catalog describing the complete line will gladly be furnished by writing Metal Lath Division, NATIONAL GYPSUM COMPANY, Buffalo, N. Y.

Partitions made of Gold Bond Metal Lath and plastered in the customary way are rated by the National Board of Fire Underwriters as second only to reinforced concrete.

GOLD BOND METAL LATH

Gold Bond Small Diamond Mesh Lath

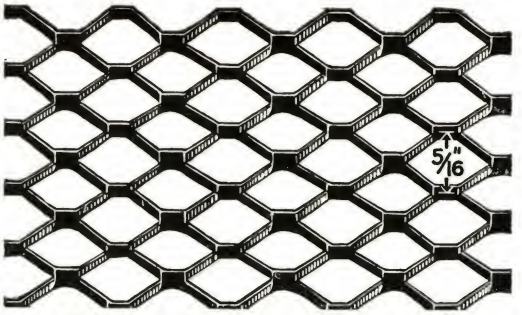
Can be used on any type of metal lath job. It constitutes better than 50% of all the metal lath sold.

Gold Bond Small Mesh boasts of having as small a mesh as any diamond mesh manufactured; containing approximately 3000 more kegs per square yard than the regular ⅜ in. mesh. Our sheets lay perfectly flat and each sheet has re-squared ends assuring full covering width. Regular ⅜ in. mesh can be furnished upon request. Is made from open hearth box annealed sheets.

Standard Weights—2.2, 2.5, 3.0, 3.4 lb. Furnished in painted steel, copper bearing and Armco Iron. Galvanized in 2.5 and 3.4 lb. only.

Sheet Sizes

—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.
—27 in. x 96 in. 10 sheets per bundle or 20 sq. yds.



Gold Bond Small Diamond Mesh Lath.

Gold Bond Cup Lath

Is the ideal stucco base. It is an exclusive Gold Bond Product. The meshes are ⅜ in. wide. Its most unique feature is that each mesh is corrugated ¼ in. deep running in a continuous straight line through the length of the sheet as well as across the full width of sheet. This exclusive cup feature assures a proper thickness of plaster or stucco and provides for the most uniformly efficient key possible reinforcing the plaster in all directions. Made from open hearth box annealed sheets.

Standard Weights—2.5, 3.0, and 3.4 lb. Can be furnished in painted steel, copper bearing and Armco Iron. Galvanized in 2.5 and 3.4 lb. only.

Sheet Size—18 in. x 96 in. 15 sheets per bundle or 20 sq. yds.

Gold Bond Cup Lath.

Gold Bond ⅛-in. Flat Rib Lath

Primarily designed to meet a growing demand for a more rigid expanded metal lath, and a more economical plastering job . . . 1280 meshes to a square foot, providing more plaster keys than any other like product on the market.

Gold Bond ⅛-in. Flat Rib saves time and money in erection costs as the new size—27 x 96 in.—can be applied in exactly the same time as the usual 24 x 96 in. sheets.

Standard Weights—2.75, 3.0 and 3.4 lb. Furnished in painted steel and copper bearing steel. Galvanized in 3.4 lb. only.

Sheet Size—27 in. x 96 in. 10 sheets per bundle—20 sq. yds.

Gold Bond ⅛-in. Flat Rib Lath.

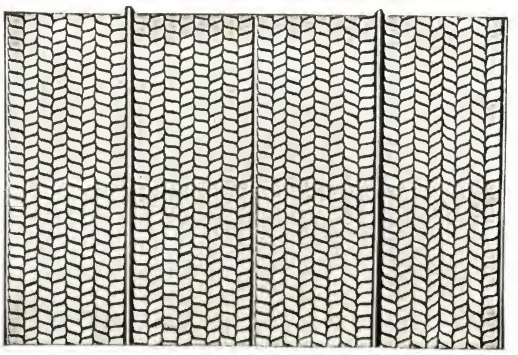
Gold Bond ⅜-in. Rib Lath

Is generally used for ceiling and for concrete reinforcing in floors in connection with steel joists, junior beams, etc.

Gold Bond ⅜ in. Rib is outstanding for its rigidity. Ribs are 4 in. on center. Sheets nest perfectly when lapping which results in a smooth surface for plastering, thereby eliminating bulges and creating a saving in plaster waste. Manufactured from open hearth box annealed sheets.

Standard Weights—2.5, 3.0, 3.4 and 4.0 lb. Furnished in painted copper bearing steel and Armco Iron. Galvanized in 3.4 lb. only.

Sheet Size—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.

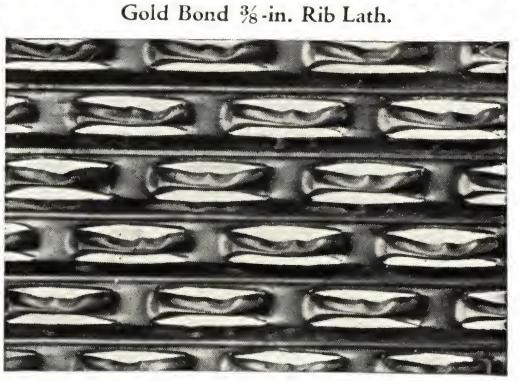

Gold Bond ⅜-in. Rib Lath.

Gold Bond Sheet Lath

Is used generally for tile backing due to its being the most rigid lath manufactured. It requires considerably less plaster than any other type of metal lath and therefore, is often used on residences and large apartment buildings. The trough formation of the ribs creates a suction and makes it the ideal lath for overhead work on ceilings. Gold Bond Sheet Lath is of our own exclusive design. Manufactured from open hearth annealed sheets.

Standard Weights—4.5 lb. in painted and 5.5 lb. in galvanized.

Sheet Size—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.


Gold Bond Sheet Lath.

GOLD BOND METAL LATH ACCESSORIES

Gold Bond Arch Corner Bead

Gold Bond Arch Corner Bead

Use—Gold Bond Arch Corner Bead is the all-purpose corner bead. Used for vertical and horizontal corners or may be easily bent for arches. Full description on next page.

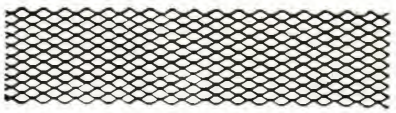
Stock Lengths—6, 7, 8, 9, 10 and 12 ft. Made in 26 gauge. 24 gauge on special order. Packed 10 pieces per bundle. Weighs 200 lbs. per 1000 lin. ft.

Gold Bond Standard Expansion Corner Bead

Gold Bond Standard Expansion Corner Beads

Use—Gold Bond Standard Expansion Corner Beads can be used in all types of construction. Forms an exceptionally fine key due to the reinforcing given by the 2½ in. wings. Is easily erected.

Stock Lengths—6, 7, 8, 9, 10 and 12 ft. Made in 26 gauge. 24 gauge on special order. Shipped in crates of approximately 500 or 1000 ft. only. Weighs 208 lbs. per 1000 lin. ft.



Gold Bond Stripite

Gold Bond Stripite

Use—Gold Bond Stripite is diamond mesh lath cut into strips. Used over joints, around window and door frames in construction where metal lath is not used throughout. Standard in painted steel. May be had in copper bearing or galvanized steel.

Sizes—2, 3, 4, 6 or 12 in. wide by 96 in. long. Packed 63 pieces per bundle (504 lin. ft.) 3x96 in. Stripite weighs 60 lbs. per 1000 lin. ft.

Gold Bond Standard Base Bead

Gold Bond Standard Base Bead

Use—Gold Bond Standard Base Bead is used as a ground where the cement base is to be divided from the plastered wall. Assures a straight and perfect division line. Made in both ½ and ¾ in. ground.

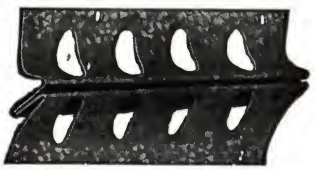
Stock Length—10 ft. only. 26 gauge. 10 pieces per bundle. Weighs 180 lbs. per 1000 lin. ft.

Gold Bond Cornerite

Gold Bond Cornerite

Use—Gold Bond Cornerite is diamond mesh lath cut into strips and bent to a right angle. Used in interior corners of walls and ceilings over wood lath, gypsum lath, etc. Standard in painted steel. May be had in copper bearing or galvanized steel.

Sizes—2, 3, 4, 6 or 12 in. wide by 96 in. long. Packed 63 pieces per bundle (504 lin. ft.) 3x96 in. Cornerite weighs 125 lbs. per 1000 lin. ft.



Gold Bond Picture Mould

Gold Bond Picture Mould

Gold Bond Picture Mould is a metal concealed picture moulding. It is erected before walls are plastered and is absolutely invisible when wall is finished.

Stock Length—10 ft. only. 26 gauge. 10 pieces per bundle. Weighs 230 lbs. per 1000 lin. ft.

GOLD BOND METAL LATH PRODUCTS

Gold Bond Cold Rolled Channels

Are used generally for suspended ceiling work and 2 in. solid partitions. They are formed cold from the best quality strip steel. Gold Bond Channels are absolutely straight and are especially adaptable to form work because of their bending qualities and rigidity.

Type	Stock lengths shown in feet	Packed Pcs. per bdle.	Weight, Lbs. 1000 lin. ft.
Pencil	12, 14	20	113
Box	16, 18, 20	20	276
¾ in.	16, 18, 20	20	276
1 in.	16, 18, 20	20	332
1½ in.	16, 18, 20	10	442
2 in.	16, 18, 20	10	553

Furnished unpainted unless otherwise specified. Pencil Channel always furnished in painted stock.

Gold Bond Metal Arches

Are made from galvannealed sheet steel. A perfect arch for approximately half the cost of curved wood forms to which must be fitted corner bead and metal lath. They are easy to erect and are ideal for residences and apartment houses. Gold Bond Metal Arches are made in true circle, gothic and elliptic designs. They are standard for 2x4 studs or bucks. The studs or bucks are to be spaced 1½ in. wider than the desired finished opening.

This allowance is for the thickness of the lath and plaster ground. Can be jointed with standard corner bead by using the shank of a No. 7 box nail.

Styles and Erection Details

Style of Arch	Spacing of Studs or Bucks	Width of Finished Opening	Height from Spring-line to Crown
No. 11	21½″	20″	10″
No. 22	33″	31½″	15¾″
No. 33	33″	31½″	11⅜″
No. 44	51″	49½″	12½″
No. 55	63″	61½″	13″
No. 66	72″	70½″	13″

Gold Bond Metal Arches are easily fitted over the lath. Saves time and insures perfectly formed arches.

Gold Bond Arch Corner Bead

Won't Kink or Break

Easily Prepared for Bending

A new product, Gold Bond Arch Corner Bead has met with instant acceptance among builders and dealers. Serves a double purpose—as a corner bead for vertical or horizontal corners—as an arch bead for curved openings. Arches can be quickly made on the job at a decided saving.

Ordinary corner beads invariably break or kink at the nose when bent. Not so with Gold Bond Arch Corner Bead because its unique design permits utmost flexibility. No mechanical bender is necessary. Simply snip one flange as illustrated at the left and bend to the desired radius. Fits over any style of lath. The flanges have twice as many perforations as most corner beads which means more plaster "keys" and greater bonding strength.

Supplied in lengths of 6, 7, 8, 9, 10 and 12 ft. Made in 26 gauge. 24 gauge on special order. Packed 10 pieces per bundle. Weighs 200 lbs. per 1000 lineal ft.

For Ornamental Plaster Work

GOLD BOND "CLIP-ON" SYSTEMS For Suspended Ceilings and 2-inch Solid Partitions

Two Patented Systems Which Combine the Use of Gold Bond Gypsum Lath and Metal Installation Clips . . . Quicker, Stronger, Cuts "Dead-Load" Weight One-Third . . . One Hour Fire Rating

SUSPENDED CEILINGS

THE important problem of keeping cracks out of suspended plaster ceilings has been approached in the most scientific and practical way in the development of the Gold Bond "Clip-On" System.

This method comprises the use of fireproof Gold Bond Gypsum Lath, galvanized copper bearing clips and standard coated channels. The channel grillage is so constructed as to permit expansion or contraction without transferring any of the resulting movement to the gypsum lath, thereby eliminating the most common cause for plaster cracks.

The panels of Fireproof Gold Bond Gypsum Lath slide into the metal clips and the job moves along like clock-work. Lathers get the "hang" of it quickly.

Stronger and Lighter

In accomplishing this freedom for expansion or contraction there is no sacrifice of strength or other desirable qualities of good ceiling construction. The Gold Bond "Clip-On" System builds the strongest ceiling of any known method. This outstanding strength is provided despite the fact that the weight of the ceiling is 20 to 30% less than usual. The "Clip-On" System weighs 45 to 50 pounds per square yard in contrast to the normal weight of 70 to 80 pounds.

One-Hour Fire Rating

The Gold Bond "Clip-On" Suspended Ceiling when plastered according to specifications, fully meets the standard one-hour fire test imposed by the fire underwriters.

Speedy Installation

Contractors find the "Clip-On" System easy to master and a real time-saver. One distinct saving—furring channels are spaced at 16-inch intervals instead of the customary 12-inch. This alone represents a saving of 25% in channels and erection labor.

The sturdy panels of Gold Bond System Lath, 16 x 48 inches, are easily clipped into place and provide a smooth, even base for plaster. Actual figures show that the plasterer will apply greater yardage per day than over any other type of plaster base.

Complete Gold Bond "Clip-On" Ceiling

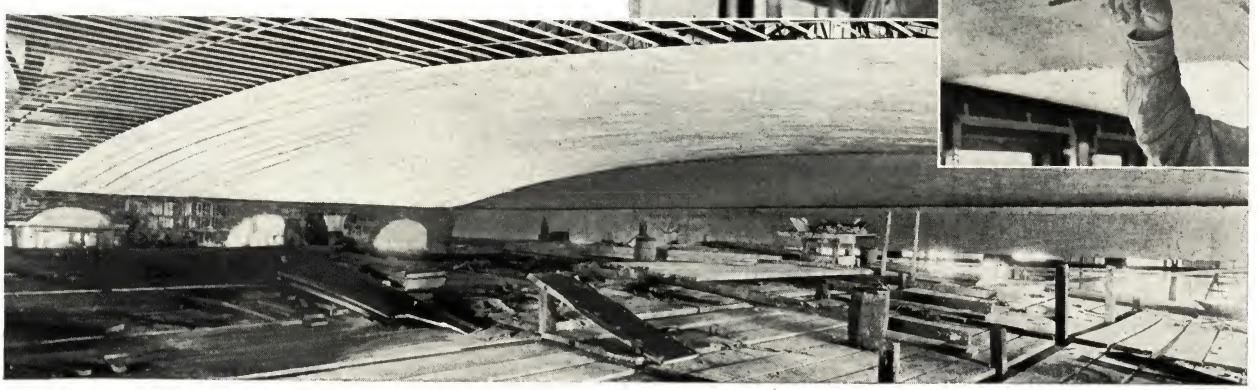
The Gold Bond "Clip-On" System is designed and sold for use with Gold Bond Gypsum Lath, plastered with Gold Bond Gypsum Plaster and finished with Gold Bond Finish Lime. In specifying the system with Gold Bond Products throughout, the architect or engineer is protected by one undivided manufacturing responsibility.

Descriptive Book on Request

National Gypsum Company will gladly send without charge, an illustrated book "Gold Bond 'Clip-On' System for Suspended Ceilings."

(left) Toggles are used on ceiling areas over 12 ft. square.

(below) Plasterers can work faster over this smooth base.



NATIONAL GYPSUM COMPANY

"CLIP-ON" SYSTEMS (Continued)

2 INCH SOLID PARTITIONS

THE GOLD BOND "Clip-On" 2-Inch Solid Partition provides a thin but very sturdy construction adaptable to hotels, apartment houses, office buildings, and especially to low-cost housing developments. Saves a full 2½ inches in width or length of a room as compared with conventional wood stud partitions, plastered on both sides. It also speeds up completion of the job at a decided saving in labor and material.

This system comprises the use of Gold Bond Perforated Gypsum Lath, galvanized copper bearings clips, and standard coated channels. Erection is rapid. Channels are spaced 24 inches on centers (or 16 inches); the gypsum lath panels 16 x 48 inches dropped into place and one sharp blow anchors the lath clips to channels. The job is then ready for plastering. As shown by the following chart, a saving of two days' time per room is effected.

DAY	2-IN. "CLIP-ON" SYSTEM	OTHER 2-IN. SYSTEMS
First	Lather erects channel studding and "clips-on" Gold Bond Gypsum Lath.	Lather erects channel studding and plaster base.
Second	Plasterer "backs up" channel studding area with scratch coat and also applies brown coat to gypsum lath side, and double backs with brown coat on channel side.	Scratch coat applied to metal plaster base. (This operation is entirely eliminated with the "Clip-On" System.)
Third	Finish coats, both sides.	Backs up channel side with fill coat.
Fourth		Brown coat on both sides.
Fifth		Finish coat on both sides.

One-Hour Fire Rating

The Gold Bond "Clip-On" Partition fully meets the requirements for a one-hour fire test rating. Not only is it a highly incombustible wall, but it provides real protection against spread of fire. As there is no wood studding, high temperatures cannot start combustion within the wall itself.

Plasterer (at left) filling in the channel side with the scratch coat. Lather (at right) builds up the partition quickly.

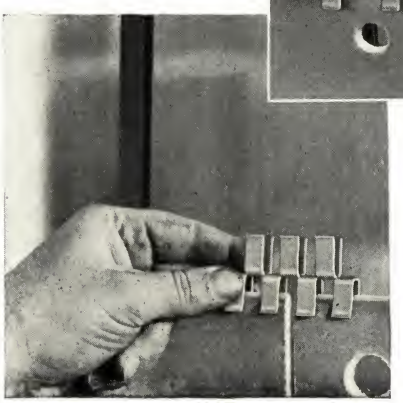
Other Advantages

The "Clip-On" System builds a 2 inch solid partition of extreme strength, yet remarkably light for a plaster partition. Enjoys the highest comparable rating on impact tests as conducted by the Bureau of Standards. Resiliency provided by metal clips practically eliminates danger of plaster cracks occurring from vibrations or structural strain.

Descriptive Book Available

Upon request National Gypsum Company will gladly send a large illustrated book . . . "Gold Bond 'Clip-On' System for 2 Inch Solid Partition Wall."

(left) Applying the "brown" coat to the face side. Plastering moves along fast over the Gold Bond Perforated Gypsum Lath.



(above) One sharp blow clinches clip No. 101 to channel.

(left) The edges of the lath panels don't have to "hit" on channels.

SECTION TWO

GOLD BOND GYPSUM PLASTERS AND FINISH LIME

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SPECIFICATIONS FOR LATHING AND PLASTERING

At Left:

Mechanically controlled mixing and bagging equipment assure accurate blending and weighing of plaster without possibility of human error.

GOLD BOND—A COMPLETE PLASTER SERVICE

How Gold Bond Supervises the Quality of Its Plaster Every Step of the Way From Mine to Finished Wall

GOLD Bond Plaster mines and quarries are located in the richest gypsum sections of the country, the vast deposits insuring approximately a hundred years' supply of exceptionally pure rock.

Purity Assured

Here in these mines and quarries daily tests are made to assure the constant purity of the rock—actual tests proving that the purity of the gypsum has a decided effect upon the strength and hardness of the finished wall. High purity also increases the coverage and smooth working qualities of the finished plaster.

Gold Bond spares no trouble or expense to obtain the purest gypsum rock, and then follows it by laboratory tests through every process of manufacture to the finished job.

Tested for Individual Job

For this purpose—suiting the plaster to the individual job—the Gold Bond laboratories are constantly testing specimens of sand from every part of the country where Gold Bond plaster is used. Samples are continually being secured to meet changes in local conditions.

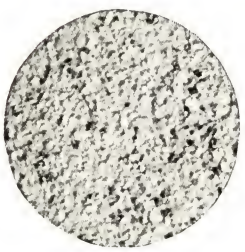
Before shipping, every batch of plaster is tested to meet the requirements of the particular sand of the vicinity into which the plaster is to be shipped. A somewhat costly process from the viewpoint of the manufacturer, but well worth the expense as it assures our customers of getting plaster that is particularly suited to their respective territories regardless of any unusual local conditions. New processes (patent applied for) insures uniformity of performance under all normal job variations and weather conditions.

Introduction of the new Gold Bond Microplastic Plaster in 1935 proves one of the greatest improvements in plaster history . . . .

Gold Bond Plasters have long been accepted as "standard" among the leading contractors of the country. Then in 1935, this enviable position was greatly enhanced by the introduction of a brand new plaster—Gold Bond Microplastic Plaster, produced after years of intensive research work.

This improved method of processing has resulted in a product that is practically foolproof as far as application is concerned. Plasticity or workability has been increased 100% with far greater coverage. The new Gold Bond Microplastic Plaster met with instant approval and experts considered this to be the greatest forward step in the development of plaster in many years.

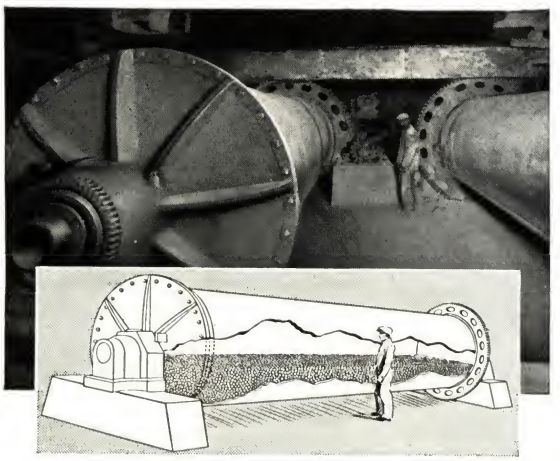
What the Micron-Sizing Process Actually Accomplishes



Before

After

Note the contrast between these microphotos. At the left the plaster is coarse and flinty, while at the right the plaster after the Micron-Sizing Process has been broken down into millions of tiny particles and then rolled into soft, felted balls.



New Equipment and New Processes Enable Gold Bond to Offer a New High Quality in Plaster

Two of the huge revolving mills which regrind the gypsum particles into micron sizes and roll them into soft felted balls.

Bottom: An X-ray drawing of interior of mill showing the 100,000 manganese steel balls which do the pulverizing.

Scientific Principle of Micron Sizes and Their Effect on Plasticity

It is a well established scientific principle that in the setting of plaster a gelatinous plastic film is produced on the surface of the particles of calcined gypsum. Gold Bond, as one step in manufacture, regrinds the particles to micron sizes (1/25,000 inch). The enormous increase in area resulting greatly multiplies the bulky gelatinous smooth working qualities.

GENERAL DATA

Characteristics and Application of Gold Bond Gypsum Plasters

The high grade gypsum rock used in the manufacture of all Gold Bond Plasters is hydrated calcium sulphate, containing approximately 20% of chemically combined water. In the calcination process most of this water is driven off, producing "plaster of Paris" which is the base of all gypsum plasters. On remixing with water on the job, the material takes back the water driven off in calcination and crystallizes or sets to the original gypsum rock.

In making Gold Bond Gypsum Plasters, small amounts of other materials are added to the basic "plaster of Paris" to control the time of set, working qualities, type of use, and particular market conditions of territory to which it is shipped.

May Be Used on All Plastering Bases

One of the many advantages of gypsum plaster is that it may be used on all types of plastering bases in addition to masonry surfaces. It may be used on gypsum, wood or metal lath; clay, concrete or gypsum tile or blocks; brick, concrete or other standard masonry plastering surface.

Adhesion Qualities

The particularly strong adhesive quality of gypsum plaster has been practically demonstrated in tests at the U. S. Bureau of Standards. It was conclusively shown that it does not depend entirely on mechanical keys but bonds on actual suction or adhesive qualities.

Dries Quickly

The advantages of the quick set and rapid drying qualities of gypsum plaster are very important in the completion of a building as well as reducing overhead. The usual time for a hard set is from 2 to 6 hours and complete drying in about 36 hours depending on weather and the season of the year. After drying there is no further sweating or dampness.

Durability

Gypsum plaster forms a hard, tough base for the application of finish coats or decoration. The tough base coats help the plaster wall to withstand rough usage which it may receive during the life of the building.

Low Coefficient of Expansion

After being applied, gypsum plaster remains inert and does not expand or contract even when subjected to fire. As it is made of gypsum it is absolutely incombustible.

Packaging

Shipped usually in 100 lb. paper bags; and some specialty products in 250 lb. barrels.

At Left:
Gypsum Mine at Clarence Center, N. Y.

At Right:
Gypsum Quarry at National City, Mich.

GLOSSARY OF TERMS AND INFORMATION REGARDING PLASTERS AND THEIR USES

In view of the use of numerous local or descriptive names for the same type of plaster and widely varying market practices, it is felt that the following classification of plasters as to names and uses will be of considerable value:

BASE COAT PLASTERS

Cement Plasters

These plasters constitute the bulk of tonnage of all types of gypsum plasters used. The term relates to all Neat (the term Neat designating a plaster containing no sand or other aggregate added at mill) plasters either with or without hair or sisal fiber. (Wood Fiber Plaster is never classified as a cement plaster.)

Cement plaster is also called by the following names in many markets:

(a) Hardwall
(b) Patent Plaster
(c) Neat
(d) Compound
(e) Paristone
(f) Base Coat Plaster

Fibered and Unfibered Cement Plaster

Hair Fibered Plaster—

Hair Fibered Plaster may contain either hair or sisal fiber. Sisal fiber is recommended as being more satisfactory than hair in plaster.

Unfibered Plaster—

This designates only cement plaster containing no fiber.

Uses for Cement Plaster—

This material is generally used for plaster work where good plaster sand is easily available and it is economically advisable to mix sand on the job rather than use a mill-mixed material. Cement Plaster is formulated for use with sand in amounts covered in directions and *should never be used Neat*—i.e., without addition of sand.

Sanded Plaster

This material is the same as Cement Plaster, except that a properly graded sand has been added at the mill in the proper amount for best plastering results. It has been called by many names listed under Cement Plaster except with the term Sanded used in addition.

Uses for Sanded Plaster—

This material is used largely where good plastering sand is not easily available, where absolute exactness of proportioning of amount of sand is required, where facilities for mixing are limited, or job is not large enough to justify trouble of mixing sand on the job. Sanded plaster is used solely with addition of water on the job.

Wood Fiber Plaster

This type of plaster contains a finely shredded wood fiber and is made primarily for use with addition of water only on the job. In some cases, however, a small amount of sand (never over one part by weight) is added on the job. In some markets this material is known as Pulp plaster.

Uses for Wood Fiber Plaster—

This material is used to a large extent for patch jobs, for work where an extremely hard wall is wanted, where base plaster is to be trowel finished, where sand is not easily available, etc.

Sanded Wood Fiber Plaster

This type plaster is on same general order as Wood Fiber Plaster except a small amount of specially graded fine sand is added. Its uses are the same as with Wood Fiber Plaster and it is used in certain markets where trade prefers a sanded wood fiber.

Concrete Bonding Plaster

This is a specially formulated wood fiber plaster to provide maximum bond to interior concrete surfaces. Ordinary gypsum or lime plaster does not bond properly to concrete surfaces. Water only is added in mixing on the job.

Bond Plaster

This material is the same as Concrete Bonding Plaster.

FINISH PLASTERS

Gauging Plaster

This is a specially ground calcined gypsum which may be either pure white or grey in color and quick or slow in set. Other names used to designate this material are as follows:

(a) Plaster of Paris
(b) Calcine
(c) Finish Plaster
(d) White Plaster (For pure white material only)
(e) Stucco

Uses of Gauging Plaster—

This material is always used in connection with lime putty finish and is the essential ingredient which provides an initial set and prevents the slow setting lime from shrinking, checking and peeling before the set of lime itself takes place. The failure to use the proper amount of Gauging Plaster is the cause of most failures on lime putty finish jobs.

The type of Gauging used depends on trade practices in each locality. The following types of material are used:

(1) White Gauging—Quick Set
(2) White Gauging—Slow Set
(3) Grey Gauging—Quick Set
(4) Grey Gauging—Slow Set

Moulding Plaster

This is made from selected rock and specially prepared for requirements of its use. This is also sometimes called Plaster of Paris. It is used for plaster moulds, ornamental plaster work of all kinds and can be used as substitute for quick set Gauging Plaster. It is generally made as a pure white plaster but in a few localities Grey Moulding is used for special purposes.

Prepared Trowel Finishes

These plasters are gypsum finish plasters manufactured to avoid the problems involved in use of ordinary lime putty finish. They contain no lime but various ingredients are added to produce exceptionally easy working and spreading qualities. Water only is added on the job. They are also known as

(a) Smooth Trowel Finishes
(b) Gypsum Trowel Finishes

Uses of Prepared Trowel Finishes—

These finishes are available as a substitute for lime putty finish whenever desired. They have replaced lime putty finish in some markets. They have the advantage of perfect bond to base, quicl setting and freedom from danger of lime burn in decoration. These finishes can be safely decorated in any manner as soon as dry.

They are available in both grey and white.

Sand Float Finishes

These are also prepared gypsum finish with addition of fine sand. They are used in markets where the semi-rough surface of a sand float finish is desired. As name implies these materials are "floated," not trowel finished.

They are furnished in both grey and white.

Keene's Cement

This is an exceptionally hard gypsum finish fundamentally different from all other types of gypsum plasters.

It is a slow setting material which can be troweled with no danger of "killing" the surface and can be re-tempered in the box without danger to material.

Keene's Cement manufactured by Best Brothers at Medicine Lodge, Kansas, and sold by Gold Bond, has always been the leader in the field.

Uses of Keene's Cement—

It is used wherever hard, extremely dense walls are required such as imitation tile bathrooms and kitchens or any places where walls are subject to unusual abuse. It is used as a finish in place of usual lime putty.

NATIONAL GYPSUM CO. GYPSUM PLASTERS

APPROXIMATE YARD COVERAGE PER TON ON VARIOUS PLASTERING BASES

Type of plaster	Gypsum lath	Gypsum insulating lath	Painted metal lath	Wood lath	Gypsum tile	Brick and clay tile	Concrete surfaces	Bags type weight, lbs.
Neat*	225-240 Sanded 1-2	225-240 Sanded 1-2	105-135 Sanded 1-2	180-210 Sanded 1-2	235-255 Sanded 1-3	165-200 Sanded 1-3	Use Bond Plaster	Paper 100 lbs.
Sanded	75-80	75-80	35-45	60-70	65-70	45-55	Use Bond Plaster	Paper 100 lbs.
Wood Fibered	115-120 Water only no sand	115-120 Water only no sand	56-65 Water only no sand	90-100 Water only no sand	.....	.....	Use Bond Plaster	Paper 100 lbs.
Bond		90 to 120 sq. yds., depending on smoothness of surface of concrete						Paper 100 lbs.
Gauging Plaster		1600 sq. yds. with 2 tons of hydrated lime						Paper 100 lbs.
Prepared Sand Float Finish		250-275 sq. yds.						Paper 100 lbs.
Prepared Trowel Finish		300-400 sq. yds.						Paper 100 lbs.
Keene's Cement		400-500 sq. yds.						Paper 100 lbs.

*Sanded 1-2 equals 1 part of plaster 2 parts sand by weight.
Sanded 1-3 equals 1 part plaster 3 parts sand by weight.

PLASTER PROBLEMS AND THEIR SOLUTION

Gypsum plasters are a highly sensitive chemical product and therefore subject to changes resulting from use under adverse conditions. A knowledge of the effect of these conditions on gypsum plasters as covered by the following table will insure the satisfactory correction of practically all plaster problems which arise:

SLOW SET: If plaster fails to set in 4 hours with all proper precautions.

REMEDIES: (1) Add amount Gold Bond Accelerator (usually handful to the bag is sufficient) necessary to give desired set. Sprinkle accelerator over dry plaster before mixing.
or (2) Add handful screened dry set plaster droppings same manner as accelerator.
or (3) Add alum or zinc sulphate in proportions two ounces per gallon water.

QUICK SET: If plaster sets in box or before it can be darbied.

REMEDIES: (1) Check to see if mixing box, tools and sand are clean and clean water used.
(2) Use retarder or ground glue in amount needed for desired set.

SHORT WORKING: If mortar works hard, does not carry sand, drops easily from wall.

REMEDIES: (1) See if material is stored in dry place.
(2) Add fresh plaster bag to bag.
(3) Add 2 shovelfuls slaked lime to each sack.
(4) Decrease amount sand and water.

PLASTER TROUBLES AFTER APPLICATION

IF PLASTERED WALL IS:	THE TROUBLE IS:	REMEDY:	TO PREVENT TROUBLE IN FUTURE:
Soft, white, chalky particularly over openings. Hot weather condition.	"Dry Out." Plaster dried before setting.	Spray walls with clean water. Keep wet till set.	Screen openings. Wet lath and floors. Avoid thin coats. If plaster slow set use accelerator.
Damp. Soft. Winter condition.	"Sweat Out." Plaster holds water and "rots."	After plaster is set open doors and windows. Supply heat.	Allow ventilation to hasten drying after plaster is set. Supply artificial heat in cold weather.
Soft, resembling sweat out—rooms have been at freezing temperature.	Walls are frozen.	Throw open building. Let walls freeze dry.	Keep walls from freezing until plaster is dry or at least 24 hours.
Soft, not due slow set or hot weather or retempering plaster.	(1) Too much sand. (2) Too fine sand.	None.	(1) Measure sand accurately. Do not use over 3 parts by weight. (2) Use other sand.
Wood lath. Cracks or bulges horizontal with lath. Straight vertical cracks.	Due swelling poor grade of lath or improperly spaced or failure to wet down. Failure stagger joints.	Remove and replaster.	Use No. 1 lath, white pine, cypress or spruce free from bark, sap, or knots. Space ¼" to ⅜" apart. Stagger. Wet lath before plastering.
Gypsum lath. Cracks around joints.	Too thin coat.	Apply second coat.	Use proper grounds.
Metal lath. Sags, cracks, does not adhere.	Too light lath, too open spaces, plaster not double fibered. Plaster over sanded.	Reapply.	Correct conditions mentioned.
Brick or tile. Small cracks.	Failure wet before plastering. Too little sand. One coat work.	Float crack or apply more plaster.	(1) Wet tile before plastering. (2) Use 3 parts sand. (3) Two coat work.
Concrete. Poor bond.	Use of improper plaster. Unprepared surface.	Remove loose plaster. Condition wall. Apply bond plaster.	Surface must be rough, clean. Use concrete bonding coat.

GOLD BOND BASE PLASTERS

With Regard to A. S. T. M. Specifications

National Gypsum Company guarantees any Gold Bond Gypsum Plaster product to have about double the strength requirements and to exceed by a wide margin the purity required for any special plaster product in the A. S. T. M. Specifications and also every other detail of these specifications. This also applies to Government specifications.

GOLD BOND CEMENT PLASTER

Neat Plaster for Base Coats—Fibered or Unfibered

Gold Bond Cement Plaster is "neat," not sanded, the sand being added at the job. Each shipment is prepared especially for the locality to which it is shipped and for the sand used in that locality. Fibered with hair or sisal fiber as ordered.

When mixed with sand it spreads well with a uniform working quality and with satisfactory results on the finished wall. On account of the purity of the gypsum it assures the maximum in sand carrying capacity, bulk and workability.

Note: Cement plaster should never be used neat—i. e., withoout adding sand.

Mixing and Proportions of Sand for Various Bases

After thoroughly mixing with sand, hoe plaster into water and bring to a uniform mix of proper consistency.

Scratch Coat on Gypsum, Wood and Metal Lath

Mix 1 part plaster with 2 parts by weight of dry sand.

On Brick and Gypsum or Clay Tile

Use 1 part plaster to 3 parts by weight of sand.

Brown Coat (Second) for All Plaster Bases

Mix 1 part of plaster to 3 parts of sand.

Application on Various Bases

On Gypsum Lath—Do not wet lath. Apply in 2 coats, scratching well in to fill joints between the lathing units. Brown coat to be darbied lightly and water used sparingly.

On Wood Lath—Soak lath 24 hours before and wet again an hour or two before plastering. Apply in 2 coats using sufficient pressure on scratch coat to obtain good key. Brown coat to be darbied lightly and water used sparingly.

On Metal Lath—Apply in 2 coats. Scratch coat to lightly cover lath and fill mesh. Scratch first coat and allow to set. Then apply brown coat, darby lightly and use water sparingly.

On Brick and Gypsum or Clay Tile—Soak brick or clay tile walls and sprinkle gypsum tile lightly before application of plaster. Apply in 2 coats. Darby brown coat lightly and use water sparingly.

Approximate Covering Capacity and Sanding

Plastering base	Gypsum lath	Wood lath	Metal lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	225-240 1 plaster 2 sand	180-210 1 plaster 2 sand	105-135 1 plaster 2 sand	165-200 1 plaster 3 of sand	235-255 1 plaster 3 of sand

Full ½ in. grounds should be used for best plaster work.

GOLD BOND SANDED PLASTER

For Base Coats Where Prepared Sanded Plaster Is Desired

Gold Bond Sanded Plaster is the same as cement plaster but is accurately factory mixed and sanded with especially selected and graded sharp sand. It requires only the addition of water and mixing to be ready for use. It is useful for localities where good local sand is difficult to obtain or where accurately mixed material is wanted

Gold Bond Sanded Plaster is also desirable for use during the winter as it eliminates the need for drying sand which is wet and frozen or for trying to secure unfrozen sand.

Gold Bond Sanded Plaster is also useful for remodeling and repair work as it may be mixed inside the building.

Approximate Covering Capacity

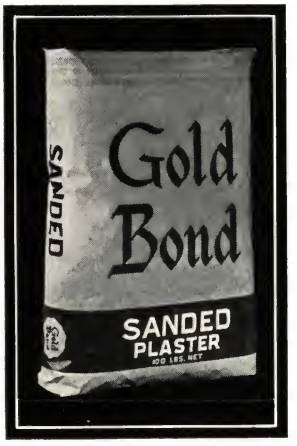
Plastering base	Gypsum lath	Wood lath	Metal lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	75-80	60-70	35-40	45-55	65-70
		No sanding required—add water only			

Application on Various Bases—Gold Bond Sanded Plasters are applied to the various plastering bases in the same manner as for Cement Plaster (see description above).

Mixing—Add nothing but water, hoeing plaster into water and mixing thoroughly. First mix thin, then add dry material to bring to proper consistency.

At Left:
Gold Bond Cement Plaster Bag

At Right:
Gold Bond Sanded Plaster Bag



GOLD BOND BASE PLASTERS (Continued)

GOLD BOND WOOD FIBERED PLASTER

Used for Base Coats Except on Brick and Gypsum and Clay Tile

Unsanded or "Neat" Wood Fibered Plaster is a gypsum plaster containing finely shredded wood fiber and requires only the addition of water to be ready for use. It does not require sand but in some localities 1 part, by weight, of sand is added.

The wood fibered plaster when used unsanded avoids dangers of over-sanding and works and spreads freely and easily. The plaster is about two-thirds lighter in weight than sanded plaster. The wood fiber acts as a reinforcing and produces a dense, tough, strong and durable base, especially for troweling. It is superior in fire resisting and sound deadening qualities to sanded plasters and will stand up where strains and vibrations are encountered. It saws like wood. It is especially adapted for winter work and alterations as it is easily handled.

Sanded Wood Fibered Plaster—Same as unsanded but is shipped factory mixed with proper amount finely graded sand.

Mixing for Application on Various Bases

Hoe plaster into water and allow to soak for 10 to 20 minutes, then mix to the proper consistency.

Scratch Coat—Use "Neat" for wood, gypsum lath and metal lath.

Brown Coat—Use "Neat" for wood and gypsum lath and "Sanded" for metal lath.

Note: Do not use either on Brick and Gypsum or Clay Tile.

Application on Various Bases

On Gypsum Lath—Do not wet lath. Apply in coats scratching well to fill joints between the lathing units and scratch surface. Allow first coat to dry then apply brown coat and broom surface before it sets.

On Wood Lath—Soak lath. Apply in coats, applying scratch coat with sufficient pressure to obtain proper key and scratch surface. Apply brown coat and broom surface before it sets.

On Metal Lath—Apply in two coats, applying scratch coat, of stiffer consistency, to cover lath and fill mesh. Apply brown coat and broom surface before it sets.

On Brick and Gypsum or Clay Tile—

Note: Wood Fibered Plaster is not recommended for use on these bases.

Approximate Covering Capacity

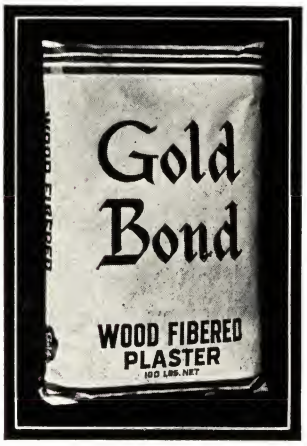
Plastering base	Gypsum lath	Wood lath	Metal lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	115-120 Unsanded add water only	90-100 Unsanded add water only	55-65 Unsanded add water only	Not recommended on these bases	

GOLD BOND CONCRETE BONDING PLASTER

For Base Coats on Interior Concrete Surfaces

This plaster is made especially to bond to concrete surfaces, on which ordinary gypsum or lime plasters will not adhere properly. It is used for scratch and brown coats. Only water should be added on the job. Do not use with sand.

All surfaces of concrete must be dry, absolutely clean, free from oil and efflorescence and should be roughened if the surface is troweled smooth.



The plaster should be applied in two thin coats just thick enough to make a smooth wall and not over ⅛ in. total thickness. Any plaster finish may be used over the bonding plaster. The finished surface should not be decorated for a year in order to allow time for any moisture in concrete to work out.

At Left:
Gold Bond Wood Fibered Plaster Bag

Mixing and Application

Mixing—Add nothing but water and hoe plaster into the water, allowing to soak for 10 to 20 minutes, then mix thoroughly to a smooth creamy consistency.

Application—Apply in 2 coats—First coat shall be scratched on as thin as possible, scratched and allowed to dry. Apply second coat just thick enough to level up inequalities, with total thickness not over ⅛ in. for both coats. Scratch the surface of bond plaster thoroughly to provide mechanical key for finish.

Approximate Covering Capacity

Approximately from 90 to 120 sq. yards per ton, depending on roughness of concrete and thickness applied.

At Right:
Gold Bond Concrete Bonding Plaster Bag

GOLD BOND FINISHING PLASTERS

With Regard to A. S. T. M. Specifications

National Gypsum Company guarantees any Gold Bond Gypsum Plaster product to have about double the strength requirements and to exceed by a wide margin the purity required for any special plaster product in the A. S. T. M. Specifications, also every other detail of specifications. This also applies to Government specifications.

GOLD BOND GAUGING PLASTER

For Gauging Gold Bond Lime Putty Finish

Gauging plaster is a specially selected, ground, calcined gypsum used with lime putty plasters to quicken the set of the lime putty and prevent checking of lime finish.

It may be either quick or slow set. It is uniformly ground to a fineness to insure easy mixing and working qualities. It is also known as Plaster of Paris.

Types

Slow Set—

Gold Bond Super White Slow Set (White).

Gold Bond Sapphire Slow Set (Grey).

Quick Set—

Gold Bond Super White Quick Set (White).

Gold Bond Sapphire Quick Set (Grey).

Directions for Mixing

Use as directed under Gold Bond Finishing Lime.

Covering Capacity

Under normal conditions one ton of Gauging Plaster to two tons of hydrated lime by weight will cover approximately 1600 sq. yds.

GOLD BOND PREPARED TROWEL AND SAND FLOAT FINISHES

For White or Sand Float Gypsum Finishes Over Gypsum Base Coats

These prepared gypsum plasters are for use as finish over gypsum base coats in place of lime putty finish. They make a perfect bond with the gypsum plaster base coats. They have exceptionally easy working and spreading qualities, set quickly and walls may be decorated in any manner as soon as they become dry. There is no dangeer of lime burns in decorations.

Sand Float Finishes contain clean sharp silica sand which has been screened, graded and dried. This sanded plaster is especially recommended for use in winter when it is difficult to secure the proper sand.

Mixing and Application

Mixing—Hoe plaster into water (adding 2 parts of plaster to 1 part of water by volume) and allow to soak for 10 minutes. Mix thoroughly to produce a smooth creamy consistency and add water until very thin.

Trowel Finish—Base coat must be hard and at least half dry before finish is applied. If suction is too great sprinkle base with water. Apply in three coats, the first coat very thin, well scratched into the surface. Allow to draw for a few minutes then lay on second coat and level off. Apply third coat very thin, filling in all imperfections and allow to draw for a few minutes. Then trowel to smooth finish, applying water sparingly with brush and complete troweling before plaster sets.

Sand Float Finish—Base coat must be hard and about half dry before finish is applied. Trowel on and finish with a float to true and even surface, using water sparingly from a damp brush and complete before finish sets.

At Right:
Gold Bond Gauging Plaster Bag

At Left:
Gold Bond Prepared Trowel Finish Plaster Bag

GOLD BOND FINISHING PLASTERS (Cont'd)

BEST BROS. KEENE'S CEMENT

For Hardest White Finish Coat

This is an exceptionally hard and dense gypsum finish and is fundamentally different from all other gypsum finishes. It is slow setting plaster which can be trowelled without danger of killing the surface. The surface takes a very hard glass-like polish. It is ideally adapted to decorative treatments and does not affect the most delicate color as it is non-staining, non-acid and non-corrosive.

It is used wherever extremely hard and dense finish is required as for installation tile and in wainscots in schools; auditoriums or any other place where walls are subject to unusual abuse.

This product is manufactured by Best Bros. at Medicine Lodge, Kansas. It has been specified for years by architects and recognized as a standard in this field.

Mixing and Application

Mixing—For hardest finish use Keene's Cement neat. For Hard finish use 100 lbs. of Keene's Cement and 25 lbs. of lime putty. For Medium Hard use 100 lbs. Keene's Cement and 80 lbs. of lime putty.

Application—Apply same as Gold Bond Prepared Trowel Finish.

GOLD BOND MOULDING PLASTER

Gold Bond Moulding Plaster (Plaster of Paris) is made for use in ornamental plaster work. It is made from selected gypsum rock of greatest purity and whiteness and undergoes special preparations for the purposes for which it is used. The purity of the gypsum deposits of the company allows the production of moulding plaster of the very finest quality. It makes an especially smooth working plaster of uniform set. It is ground finer than other gypsum plasters and permits a finer surface and greater freedom from pin holes.

On account of its hardness and great strength after setting it is used for plaster moulds and ornamental work of all kinds. The plaster sets with little heat resulting in low expansion and contraction, especially desirable when used in moulds. The low temperature does not affect glue or gelatine moulds. It is used for running mouldings, cornices and ornamental use of a similar type as it can be worked so smoothly and produces a perfect, smooth surface.

Mixing Directions

Mix with water only and bring to proper consistency for use.

GOLD BOND COLOR TEXTURE

A casein-base texturing material that provides a beautiful decorative finish for gypsum wallboard, plaster or practically any type of surface. Simply mixed with water, applied in a thin coat with trowel or paint brush and textured to suit. No tinting, glazing nor further decoration required. Easily cleaned with a damp cloth.

Supplied in six pastel shades and white. Packed in 10 lb. and 25 lb. cartons. (See pages 32 and 33.)

GOLD BOND LIME PROOF COLORS

The Gold Bond line comprises a full assortment of highest grade, non-fading, Lime Proof Colors used for tinting Gold Bond (white) Color Texture, Craftex, stucco, mortar and other water mixed materials.

As all Gold Bond Lime Proof Colors are full strength, only small quantities are required for the average job. Accordingly, they are supplied in small, air-tight containers in the following colors:

Red (1½ lbs.)	Black (1¾ lbs.)	Yellow (¾ lb.)
Blue (1 lb.)		Raw Sienna (1¼ lbs.)
Green (1¾ lbs.)		Burnt Sienna (1¼ lbs.)
Raw Umber (1 lb.)		Burnt Umber (1¼ lbs.)

Packed 24 cans to the case.

Note: All containers are the same size. The difference in weights is because of the varying densities of the colors.

Mixing

Mix the dry color with a little water and stir thoroughly to form a thin paste. Strain this mixture through a fine mesh screen to remove lumps. Then add to the wet mortar, texture, or other material to be colored.

Important! When adding color to the wet mix, keep in mind that the tinted material when dry will be lighter in color.

GOLD BOND FINISH LIME

Gold Bond Lime from Famous Ohio Lime Country

The very finest lime deposit in the world is that in the northwestern Ohio dolomite lime fields. This is located a few miles south of Toledo and by far the largest quantity of finish lime produced in the country comes from producers located within an area of a radius of about five miles.

Gold Bond Lime is produced in this area at our plant at Luckey, Ohio, and the purity of the lime ranks with the finest produced in this high quality lime producing section.

The Quality of Dolomite Limestone

The chemically pure dolomite limestone contains 45.5% magnesium carbonate and 54.5% calcium carbonate. A. S. T. M. specifications require a 95% minimum oxides of the two combined. The Gold Bond deposits average between 98% and 99% containing 55.56% Calcium Carbonate and 43.41% Magnesium Carbonate.

It is the magnesium carbonate, when properly burned which gives the plasticity and easy slip or working qualities of a building lime. It is due to the quality of plasticity that the dolomite lime is so favored by the trade. Limes of high calcium content are not as easily worked as the Ohio dolomite lime.

Automatic and Machine Controlled Burning of Lime

One of the important steps in the production of good lime is in the proper burning of the magnesium carbonate. As the calcium and magnesium carbonate require widely different temperature to change them to oxides by burning, it requires very careful regulation of heat. The National Gypsum Company has patented and installed apparatus which definitely controls the burning automatically as against depending on the skill of a fireman in control of his fires, so that overburning is a practical impossibility. Overburning makes the lime tough and hard working without "slip" and will not hold its water against the suction of the wall.

Hydration Scientifically Controlled

The process of hydration is also absolutely and automatically controlled by the equipment of this company. Lime as it comes from the kiln exists as calcium and magnesium oxides. A definite percentage of water is added which combines chemically with the calcium oxide but *not* with the magnesium oxide. The lime is then ground and sacked.

The Reason for Soaking Lime Overnight

The small amount of water used in hydration does not combine with the magnesium oxide. When soaked overnight, the magnesium oxide slowly reacts and forms a "jelly" which produces the slip and easy working qualities of the Ohio dolomite lime. It will therefore be readily seen that the more perfect the hydration of the magnesium the greater the plasticity of the lime.

Plasticity the Test of Quality of Gold Bond Lime

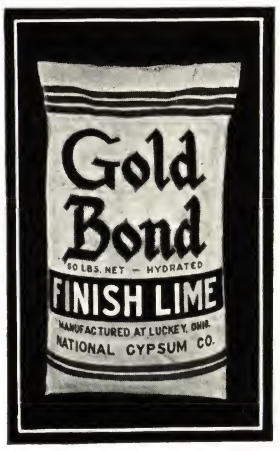
One of the most important tests of lime is that of its plasticity. In the Federal Standard Stock Catalogue, SS1L-351, Section IV, Part 5, E-6, it requires that finishing hydrated lime shall have a plasticity figure of not less than 200. The minimum value which our plant specifications allow to be shipped as finish lime is 300.

Mixing Gold Bond Finish Lime—Fill water tight box about two-thirds full of clean water. The dry lime should then be sifted gradually into the water until fully soaked. Enough excess water to provide 1 to 2 in. of water over the lime should be supplied. Soak overnight. In application, mix 3 parts of lime putty by 1 part of dry gauging plaster by volume. Mix thoroughly.

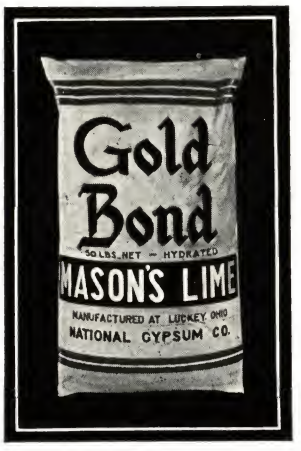
Covering Capacity—Under average conditions, the proportions specified should cover approximately 500 to 700 sq. yds. per ton of lime. Shipped in 50 lb. paper bags.

GOLD BOND MASON'S LIME

This is a hydrated lime for use with lime cement and sand, or lime and sand mortars, or for concrete construction. It is used by mason contractors wherever a good easy working lime, which will bulk well in putty is required. This lime is manufactured especially for its particular uses. Shipped in 50 lb. paper bags.



Gold Bond Finish Lime Bag



Gold Bond Mason's Lime Bag

GOLD BOND TROWEL FINISH MACOUSTIC

Fireproof Acoustical Plaster for Acoustical Correction and Noise Reduction . . . Sound Absorption of .50 at Frequency of 512 Cycles Applied 1/2 Inch Thick . . . Supplied in White and Factory-Mixed Tints

GOLD BOND TROWEL FINISH MACOUSTIC is a fireproof acoustical plaster of unusually high sound absorption. Recommended for all types of new buildings where acoustical correction is advantageous such as theatres, auditoriums, churches, radio studios, etc. In buildings of this kind, Trowel Finish Macoustic is used to reduce reverberations and make hearing conditions ideal.

Macoustic also excels as a sound absorptive material for use in hospitals, corridors, schoolrooms, libraries, swimming pools and restaurants—the objective in these cases being to subdue noise as much as possible.

Macoustic is simply mixed with water and applied full ½ in. thick over a base of gypsum plaster, lime plaster, or portland cement. No special tools are required nor specially trained applicators. A regular steel trowel is used and any plasterer can do the work.

Fireproof, Sanitary, Permanent

Trowel Finish Macoustic, a mineral product, is fireproof, vermin proof and absolutely permanent. Because of the nature of the buildings in which acoustical material is generally used, namely hospitals, theatres, etc., the fireproof and sanitary qualities of the material are of vital importance. In selecting an acoustical material, consideration should be given to these qualifications as well as sound absorption and permanency.

Sound Absorption

The following ratings appear in Bulletin No. 5 issued by the Acoustical Material Association. They cover official tests of material applied under conditions simulating actual job conditions. Tests were conducted by Paul E. Sabine, Riverbank Laboratories, Geneva, Ill.

Sound Absorption Coefficients

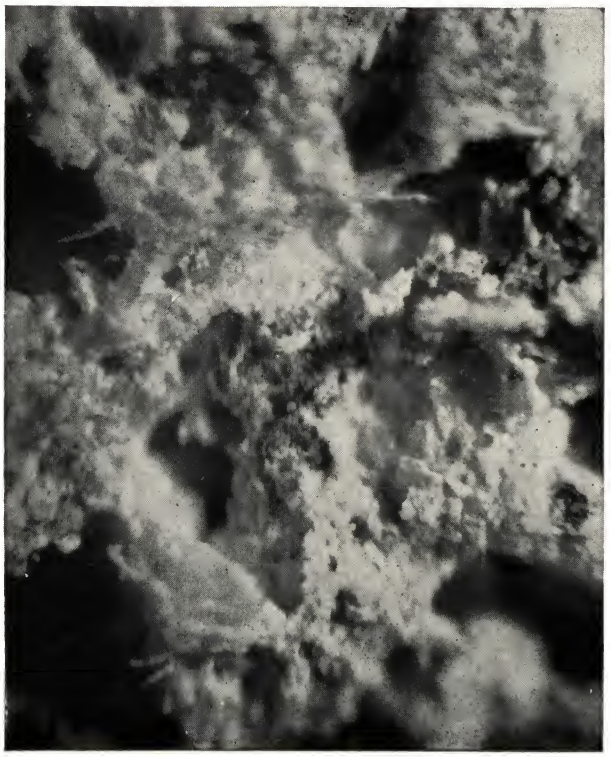
Material	Thickness	Frequency				
		128	256	512	1024	2048
Trowel Finish Macoustic	½ inch	.30	.28	.50	.79	.54

Noise Reduction Coefficient .55.

Federal Jobs—Gold Bond Trowel Finish Macoustic Plaster ½ in. thick meets Federal Specifications for Plaster; Acoustic SS-P-391 at the following classifications: Class I for Auditorium Treatment . . . Class T for Noise Reduction.

Colors

Color No. 1 White (Natural Color)
Color No. 5 Ivory
Color No. 10 Cream
Color No. 15 Buff



(above) The surface of Trowel Finish Macoustic, full size. Under a magnifying glass this surface appears as a mass of tiny ducts which permit the entrance of sound.

(left) Microphoto of internal cross-section of applied Trowel Finish Macoustic, magnified 32 times. This labyrinth of intercommunicating sound channels is created by the automatic bursting of millions of entrapped gas bubbles, during the drying process.

Special Decoration and Cleaning

Where specifications call for special colors, Macoustic in white or ivory may be used and decorated (after application) with Gold Bond Casein Paint, Sunflex or other non-bridging paints, brushed or sprayed on (the latter is preferable). Oil paints should not be used as they will seal the surface and reduce the sound absorption.

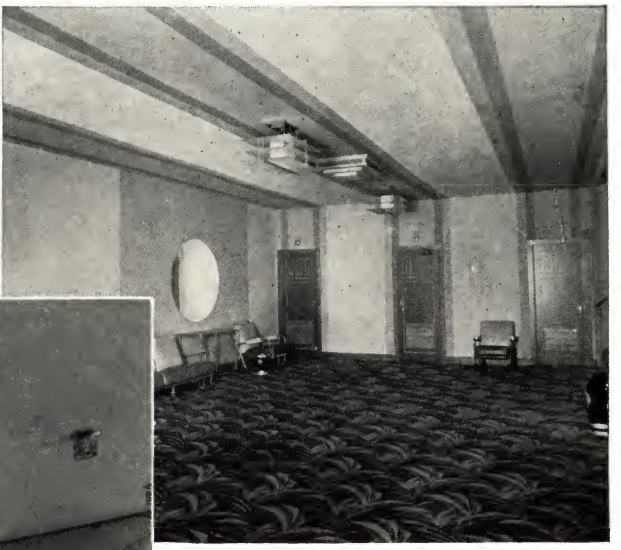
Macoustic may be cleaned by going over the surface with a hand vacuum cleaner. Or a cloth, dampened with a mild solution of Ivory soap and water, may be used. If the surface gets real dirty, it is generally more economical and quicker to redecorate as the cost of spraying with one coat of paint is very moderate.

Swimming Pools

Trowel Finish Macoustic may be used in swimming pools and similar places where the material will be subjected to almost constant high humidity but must be applied over a portland cement base.

Have Sample OK'd Before Starting Job

To acquaint plasterers on the job with the ease and simplicity with which Trowel Finish Macoustic is applied and the manner of finishing the surface, it is recommended that a few shovelfuls of the material be mixed and applied to some convenient wall space before starting the job. Have the architect approve this sample as standard for the job.



(above) Smoking Room in Theatre. Note how effectively the Macoustic ceiling fits in with the wall treatment. Macoustic was also used in the theatre itself as pictured on page 3.

(left) This Macoustic ceiling serves a double purpose. When the auditorium is used for assemblies, Macoustic reduces reverberations and makes hearing conditions ideal. When used as a gym, noise is effectively hushed.

Specifications for Gold Bond Trowel Finish Macoustic

Specifications

1-1. Scope—Areas, as specified on plans, shall be covered with Gold Bond Trowel Finish Macoustic (state color number).

1-2. Material—Acoustical plaster shall be Gold Bond Trowel Finish Macoustic Color Number (state number) as manufactured by National Gypsum Company, Buffalo, N. Y. All Macoustic shall be delivered to the job in its original containers and nothing shall be added but clean water.

1-3. Thickness—Macoustic shall be full ½ in. thick; applied in two ¼-in. coats.

1-4. Mixing and Applying—Macoustic shall be mixed and applied strictly in accordance with instructions supplied by the manufacturer.

Mixing

Trowel Finish Macoustic, as delivered in bags, is ready for mixing with clean water. Nothing else may be added on the job. A slight excess of water is recommended during the soaking process and the mixture should be allowed to stand for an hour before using. Then, add enough dry material to bring the mass to a stiff working consistency. May be retempered if necessary. Overnight soaking is not recommended. A mechanical mixer, if available, is recommended. Give the mixture a brisk hoeing just before hodding.

Application

Trowel Finish Macoustic may be applied over a base of gypsum plaster, lime plaster, or portland cement—the base to be done dry and well scratched. Apply in two coats. The base (scratch) coat should be ¼ in. thick, applied with a steel trowel *and left as it comes from the trowel.* Allow this first coat to stand overnight.

Next, apply a second ¼ in. coat of the same mix and *bring to a true surface with as little troweling as possible.* Allow to take up until free water has disappeared. Then drag trowel over the surface to eliminate trowel marks and to open up surface.

Swimming Pools—Trowel Finish Macoustic may be applied in swimming pools or similar buildings where it will be subjected to almost constant high humidity but must be applied over a base of portland cement rather than gypsum plaster. (Recommended base is composed of equal parts of portland cement and finish lime with two parts of sand.)

Joinings—Joinings or lap marks should be avoided wherever possible by finishing one complete unit or panel at a time.

Drying—Trowel Finish Macoustic is a slow drying material, requiring at least 10 days to dry thoroughly, depending upon temperature and drying conditions. It becomes progressively harder and stronger for a period of months after application.

MASTER SPECIFICATIONS FOR INTERIOR LATHING AND PLASTERING

GENERAL NOTES

Uses of Master Specifications

It is intended that the following specifications will cover practically all conditions which are usually met with in ordinary construction. Only the paragraphs applying to the particular type of job should be selected and used by the architect. Special lathing bases are not included and if these are used the method of application and use of plaster should follow the recommendations of the manufacturer.

Consulting Service on Lathing and Plastering

The National Gypsum Company has over two hundred representatives located throughout its territory who will be glad to consult with architects and lathing and plastering contractors on any lathing or plastering problems which may arise. This is in addition to the technical laboratory and research department located at the Buffalo Office which may be called upon at any time for technical information.

New and Old Work

The following specifications are written only for new work. For alteration work the clauses will have to be altered to cover such work especially in regard to where old and new work join.

SECTION 1

LATHING AND PLASTERING SPECIFICATIONS

Note: (a) Acoustical Plaster—See page 33 for specifications on Gold Bond Trowel Finish Macoustic.

(b) If trade practice requires separate specifications for lathing and for plastering, the specification should be written accordingly.

1. General Conditions

The General Conditions of the Contract of the American Institute of Architects (current edition) shall form a part of this specification. (If the A.I.A. Standard Form is not used then refer to the one used.)

2. Scope

2–1. This contractor shall furnish all materials, labor, scaffolding and staging which will be required to satisfactorily complete the lathing and plastering work to be executed as hereinafter described or indicated on the contract drawings or schedules.

3. Extent of Work—Furring, Lathing and Plastering

3–1. All Metal Furred or Suspended Ceilings

Note: Wood furring or hung ceilings should be specified under carpentry.

3–2. All metal wall furring and miscellaneous metal furring

3–3. All metal stud partitions

3–4. All lathing

3–5. All interior plastering including Keene's Cement as follows:

Note: Here describe exceptions and amplifications in regard to lathing and plastering or refer to schedule of finishes and drawings.

- **a.** Note where plaster is to be omitted.
- **b.** Note where one or two coat plaster is required.
- **c.** Note where white finish is omitted.
- **d.** Note ceiling or beams, cornices, etc., to be furred (Type furring)
- **e.** Note walls to be furred (Type furring)
- **f.** Note if lath or base and scratch coats back of tile work, marble or slate are to be included or omitted from this contract.

4. Relations with Other Trades

4–1. Temporary Enclosures — Temporary cloth enclosures over all window and other exterior openings throughout the portions of the building to be plastered shall be provided and maintained by the carpenter during application and drying of plaster.

4–2. Temporary Heat, Light and Water—Shall be supplied by others.

Note: Plastering Contractor or General Contractor may be required to supply salamanders, fuel, heat and maintenance without fire hazard before heating plant is installed, depending on contract agreements. After heating system is installed heat may be supplied by heating system through the General Contractor or Owner.

4–3. Grounds and Furring—All necessary wood grounds for furring and lathing shall be installed by others.

4–4. Inspection of Grounds and Plastering Bases—All grounds and plastering bases shall be inspected by this contractor from time to time and before commencing his work and he shall report to the Architect and General Contractor any defects in such work which may in his opinion affect satisfactory finish, accuracy and stability of the work under his contract.

4–5. Failure to report such defects requiring correction or replacement before commencing his work shall be construed as acceptance of such work by this contractor and he shall not be relieved of responsibility and obligation under his guaranty.

5. Protection of Work and Building

5–1. All finished work, such as woodwork and glass, shall be adequately protected by Contractor from damage and plaster droppings and he shall make good such damage at his own expense and without cost to the owner.

5–2. Furnish, install and maintain waterproof protection at source of water, under all mixing boxes and gauging barrels.

5–3. Any spill or drip of any kind shall be taken up at once and any sand, sawdust or protection for floor if removed shall be replaced with new material.

5–4. This Contractor shall be responsible for all damage occasioned by the mixing, handling and storing of mortar and materials or through his failure to provide necessary protection.

6. Patching

6–1. All plaster work which is damaged by this Contractor shall be made good by him at his own expense.

6–2. After the erection of finish by other trades, this Contractor shall patch all plaster which is damaged by other mechanics but the cost shall be paid for by the Contractor who caused the damage.

6–3. This Contractor shall cut out, when required, any defect in his work and replaster and leave in perfect condition.

7. Preparation of Surfaces

7–1. This Contractor shall clean the surface to which or against which plaster is to be applied, removing all mortar droppings, etc., as may be necessary, to allow plaster to adhere to same.

7–2. Concrete surfaces and combination tile and concrete surfaces which are too smooth to receive plaster shall be sufficiently roughened by hacking to secure adequate bond.

Note: (Hacking will be done by others.) Concrete forms should be made of rough boards and be free from oil.

7–3. Concrete surfaces shall be dry and brushed free from dust, soot, grease and oil. (Burn off oil or grease with torch.) Any low places in masonry walls shall be filled out and any unevenness shall be straightened with unfibered plaster ahead of base coat.

7–4. Efflorescence shall be removed with a wire brush and washed with muriatic acid and water, one (1) to five (5) solution. Remove acid by thorough washing with clean water.

7–5. Wood Lath shall be wetted down as specified under Wood Lath, Sec. 5, Par. 1-1-1.

7–6. Gypsum lath and fiber insulating lath shall not be wetted down at any time.

7–7. Where necessary for suction, wet brick, concrete and clay tile surfaces before plastering.

8. Wood Grounds

All wood grounds shall be provided and installed by the Carpenter and shall be of such thickness and so set to provide for ½ in. thick plaster over all types of laths and gypsum tile and ⅝ in. thick plaster over all brick, clay tile and other masonry.

Wood Lath	¾ in. grounds
Gypsum Lath ⅜ in. thick	⅞ in. grounds
Gypsum Liner Board ¼ in. thick	¾ in. grounds
Insulating Board ½ in. thick	1 in. grounds
Metal Lath—Expanded, Sheet and Wire	¾ in. grounds
Gypsum Tile	½ in. grounds
Brick and Clay Tile	⅝ in. grounds

Note: Thickness of grounds includes thickness of lath.

9. Sample Finishes

Where special textured finishes are required, this Contractor before proceeding with the work shall prepare and erect, where directed by the Architect, sample panel of each finish required, not less than 3 ft. square. These samples shall be made to the satisfaction of the Architect. After approval by the Architect, the finished work shall equal the samples in all respects.

10. Workmanship

All work shall be executed by skilled workmen in such a manner as to fulfill the requirements of the drawings and specifications.

11. Cleaning

11–1. After completion of his work, this Contractor shall remove from the building all scaffolding and tools of every sort used by him, taking care not to damage work of the other trades.

11–2. All plaster rubbish, plaster droppings, etc., shall be removed by this Contractor and the building left broom clean.

11–3. (This Contractor shall remove all plaster from glass and other finish and leave in first class condition.)

11–4. (The removal of debris and cleaning required, resulting from the work of the Contractor, shall be done by others.)

12. Guarantee

12–1. This Contractor shall furnish a written guarantee as a part of this contract, warranting all work and materials under this contract against defects for a period of (one year) (specifying time) from the completion and acceptance of the work as shown by date of final payment and he binds himself to repair and replace any defect which may develop within that period, without additional payment beyond the amount of the contract, when ordered to do so by the Owner or the Architect.

12–2. (This shall also include the cost or repairs or replacement of any material, decoration or other finish damaged by the defects.)

SECTION 2

FURRING AND SUSPENDED CEILINGS

1. Wood Furring and Suspended Ceilings

Note: Wood furring and suspended ceilings which are to be plastered should be included under Carpentry.

2. Masonry Furring

Masonry furring such as hollow blocks of tile, etc., should be included under Masonry.

3. Materials

3–1. Metal Furring—Shall be Gold Bond Cold Rolled Channels. (See page (?).)

3–2. Metal Partition Studs—Shall be Gold Bond Cold Rolled Channels of sizes specified.

4. Metal Furred Suspended Ceilings

4–1. Location—Ceilings shall be furred or suspended with metal furring where so indicated on plans or on schedules. Where finished surfaces of plastered ceilings are six (6) in. or more below the soffit of floor construction, they shall be considered as suspended ceilings.

4–2. Hangers—Shall be placed not to exceed 4 ft. center to center in either direction. The minimum size for hangers shall be No. 8 galvanized wire, 1 x $\frac{3}{16}$ in. flats or $\frac{7}{32}$ in. round mild steel rods.

The upper ends of hangers if wire, rods or flats, shall be of sufficient length to wrap around beams or provide a suitable anchorage in concrete or tile. Where steel beams or purlins are not more than 4 ft. center to center, hangers may be attached directly to them. When hangers are hung from concrete beams or arches, the hangers shall be placed before concrete is poured. When ceilings are hung from terra cotta floors, hangers may be installed at tile joints during erection, or may be installed after tile is in place, holes bored clear

through tile and secured on upper side by steel rod or toggle bolt.

4–3. Runner Channels—Shall be placed not to exceed 4 ft. on centers, and shall be not less than 1½ in. cold or hot rolled channels weighing not less than 442 lbs. per thousand lineal feet. Lower end of wire hangers shall be secured to runner channels by three twists around same; lower end of rod hangers shall be secured to runner channels by two twists, or by wiring; lower end of flat steel hangers shall have holes punched at the proper distance to which the runner channels shall be bolted with not less than ⅜ in. diameter bolts.

Runner channels shall conform to the contour of the ceiling.

4–4. Furring Channels—Shall be not less than ¾-in. channels with a minimum weight of 276 lbs. per thousand lineal feet; they shall be erected at right angles to the runner channels of No. 16 galvanized annealed wire at each crossing, or by No. 9 wire hairpin clips.

Furring channels shall be spaced as follows:

Not over 12 in. apart for 3.0-lb. flat expanded metal lath is used, or over 16 in. apart for 3.4-lb. flat expanded metal lath; not over 16 in. apart for 3.0-lb. flat rib expanded metal lath; not over 19½ in. apart for 3-lb. ⅜-in. rib expanded metal lath; and not over 24 in. where 3.4-lb. ⅜-in. rib expanded metal lath is used.

4–5. Metal Lath—Shall weigh not less than 3.00 lbs. for ceiling and 2.50 lbs. per sq. yd. for side walls, provided, however, that minimum weight shall be governed by spacing of furring channels as specified in the preceding paragraph.

The metal lath shall be wired to the furring channels (the long dimension of the sheet being across the channels) by No. 18 gauge galvanized annealed wire every 6 in. along the furring channels; there shall be one tie on side laps half way between channels. Lap sheets at sides and ends not less than 1 in.

Where ceilings, cornices or other features, formed with metal lath, finish against masonry walls, partitions or arch soffits, the lath shall extend onto masonry surface at least three (3) in.

4–6. Brackets for cornices, beams, etc., shall be built up of 1-in. steel members spaced same as for runner channels and shall be securely fastened to masonry or other structure supports. Cross fur and lath same as for ceilings.

5. Metal Stud Partitions

5–1. Solid Partitions—

(a) Metal Studs for solid partitions shall be not less than ¾-in. cold or hot rolled channels weighing not less than 276 lbs. per thousand lineal feet, and spacing of studs shall conform with weight of lath as in paragraph (a) of these specifications.

(b) Studs shall be secured in position by inserting ends in holes punched ¾ in. in top of concrete or other masonry floors or in soffits of masonry ceilings, or by attaching to stud shoes, or by placing ends in holes drilled in wood floor bucks anchored to masonry floors at 4-ft. intervals; on floors by wire-tying to nails driven 1 in. into floors and projecting at least 1 in. above. Where metal lath ceilings are used, a small hole shall be made in the ceiling lath and the end of channel allowed to project through it and be wired to a channel attached to the ceiling lath.

(c) Splicing of studs shall be made by lapping channels not less than 8 in. with flanges interlocked and tied.

(d) Erection of metal lath, for solid lath and metal stud partitions, shall be the same as that given in Par. (1) excepting that metal lath is applied only on one side of channel studs and tied instead of nailed or stapled.

(e) Note: Solid partitions over 6 ft. high shall be temporarily braced horizontally on the channel side at intervals not exceeding 6 ft. vertically before applying plaster. Such bracing shall not be removed until scratch coat on the lath side of the partition has set.

(f) In every case one channel shall be set next to wood buck at each side of openings and double-wired securely to 8d nails driven on each side of channel in pairs into buck at 2-ft. intervals. Bottom of door buck shall be securely spiked to wood plug in floor, or attached by metal anchors.

5–2. Hollow Metal Lath Partitions—Use Specifications (5-1) but call for wide single channel, or a double row of ¾-in. channels with separators every 2 ft. vertically, and metal on both faces of partition.

6. Metal Wall Furring

6–1. Where wall furring is indicated on plans or in schedule for walls, beams, girders and other vertical surfaces, it shall consist of ¾-in. vertical channels spaced not more than (specify spacing) (12-in.) on center and shall extend from floor to ceiling arch and be firmly secured top and bottom. Intermediate braces shall be provided as specified for metal stud partitions. Flanges shall face masonry and shall be secured with special hook nails or other device best suited to the masonry or mortar joints.

6–2. Pipe and Ducts—Pipe and ducts required to be enclosed shall be furred as specified for wall furring. Where required to support plumbing fixtures, additional horizontal members of 1½ x $\frac{3}{16}$ in. flats shall be wired to vertical members at proper heights to support fixtures.

6–3. Pipe Chases—Over 12 in. wide shall be furred in same manner as wall furring with metal lath extending at least 3 in. each side of opening.

6–4. Heads and Jambs—Fur and lath heads and jambs of windows and doors, when specified or indicated to be plastered, in same manner as for wall furring.

6–5. Corner Beads—Corner beads shall be installed on all exterior angles in plastered rooms or spaces to run from floor to metal corner bead or to spring line of arches where arch heads are used and shall be of type and gauge as specified under materials.

6–6. Metal Grounds—Shall consist of heavily galvanized steel and shall be set true to plane of finished wall surface and shall be securely fastened to the masonry, furring or other support.

6–7. Miscellaneous Furring—(List here other miscellaneous furring required as for stair soffits and any special features requiring metal furring and lathing.)

6–8. No furring shall be placed until all pipes, conduits, etc., have been permanently placed.

6–9. General—All furring and lathing, for all vertical or horizontal surfaces for walls, cornices, beams, arches, carved work, etc., shall be level, plumb true and rigid and accurately formed so that all surfaces to receive plastering shall be generally one (1) inch back of finished surface.

SECTION 3

LATHING AND PLASTERING ACCESSORIES

1. Materials

1–1. Wood Lath—Shall be No. 1 Grade, or better, free from knots, sap and bark, approximately ⅜ in. thick, 1½ in. wide and either 32 in. or 48 in. long.

1–2. Gypsum Lath—Shall be Gold Bond Gypsum Lath ⅜ in. thick (or ½ in. thick)—16x48 in. (or 16x32 in. or 16x36 in.).

1–3. Metal Lath—Shall be Gold Bond Metal Lath, National Gypsum Co. (specify type, finish and weight for spacings on both horizontal and vertical installations). See pages 17 and 18 for metal lath.

Recommendations of Associated Metal Lath Manufacturers, Inc., follow:

1–4. Minimum Weight of Metal Lath—

(a) *Expanded Metal Lath for Interior Work—*

For vertical position, partitions, etc., attached to metal supports 12 and 13½ in. on center, lath shall weigh a minimum of 2.5 and 3.0 lb., respectively, except for solid partitions where 2.2 lath may be used on 12-in. spacing; and 3.4 lath on 16-in. spacing. For nailed-on partitions. maximum spacing shall be 16 in. for all flat laths, minimum weight to be .....2.5 lbs.

For tied-on ceilings attached to metal supports, maximum spacing shall be 12 and 13½ in. for 3.00 and 3.4 lb. flat lath; for nailed-on ceilings, maximum spacing shall be 16-in. for these laths.

(b) *Flat Rib Lath—*

For Nailed or Tied-on Partitions and Furring:
For supports spaced not to exceed 16 in. on centers.....2.75 lb.
For supports spaced not to exceed 19 in. on centers.....3.0 lb.

For Nailed or Tied-on Ceilings:
For supports spaced not to exceed 12 in. on centers.....*2.75 lb.
For supports spaced not to exceed 16 in. on centers.....3.0 lb.
For supports spaced not to exceed 19 in. on centers.....3.4 lb.
*For nailed-on ceilings, this lath may be used 16 in. on centers.

(c) *⅜-in. Rib Lath—*

For Nailed or Tied-on Partitions and Furring:
For supports spaced not to exceed 19 in. on centers.....2.5 lb.
For supports spaced not to exceed 24 in. on centers.....3.0 lb.
For supports spaced not to exceed 31½ in. on centers.....4.0 lb.

For Nailed or Tied-on Ceilings:
For supports spaced not to exceed 19 in. on centers.....2.75 lb.
For supports spaced not to exceed 24 in. on centers.....3.0 lb.
For supports spaced not to exceed 31½ in. on centers.....3.4 lb.

1–5. Cornerite—Shall be Gold Bond Cornerite.

1–6. Corner Beads—Shall be Gold Bond Corner Bead (specify type).

1–7. Base Screed—Shall be Gold Bond Base Screed (specify type).

1–8. Picture Mould—Shall be Gold Bond Metal Picture Mould (specify type).

1–9. Metal Plaster Arches—Shall be Gold Bond Metal Plaster Arches (specify type).

2. Application of Wood Lath

2–1. General—Lath with wood lath all (exterior stud walls) (wood furred walls) (stud partition) (ceiling beams or joists) (stair soffits), etc., which are specified to be plastered.

Note: It is recommended that ceiling over furnace and fuel room be lathed with gypsum lath or metal lath for fire protection or at least for a distance of 5 ft. beyond all sides of the furnace. Also stud walls enclosing furnace room.

2–2. All lath shall be spaced not less than ¼ in. nor more than ⅜ in. apart, a space of ¼ in. being left between abutting ends and shall be secured at each bearing with 3d lathing nails, using two (2) at each end and one (1) at each other bearing.

2–3. Lath shall be applied at right angles to the supports and joints shall be broken at not more than every seventh lath. No laths shall be carried from room to room. No lathing shall form long vertical joints or be set vertically to fill out at angles or corners.

2–4. Reinforce all re-entrant angles with Gold Bond expanded metal Cornerite and metal corner beads on all exterior angles. All strips shall extend at least 4 in. on each wall and shall butt at ends and not lap and shall be securely nailed or stapled at edges but not in corners.

2–5. Corner Beads—All external corners, both vertical and horizontal, shall be protected with corner beads, of the types or type specified for their full height or length; same to run from top of base to ceiling, heads or beams or to the spring line of arches.

2–6. Where wood lathing on walls, partitions or ceilings abut masonry work, strips of painted metal lath, extending at least 4 in. on each side of the intersection shall be securely fastened. Lath shall weigh not less than 2.5 lbs. per sq. yd.

2–7. Where heat pipes are concealed in walls or partitions, they shall be lathed over with strips of Gold Bond Gypsum Lath or Gold Bond Painted Expanded Metal Lath nailed securely to nearest supports.

2–8. Openings or where studs are spaced over 16 in. wide, as back of medicine cabinets, etc., shall be lathed with expanded metal ribbed lath.

Note: Add here any other special condition requiring metal lath, such as back of tile wainscot, etc.

2–9. Grounds for use with wood lathing shall be ¾ in. thick, including thickness of lath and shall be installed as specified under Carpentry.

3. Application of Gold Bond Gypsum Lath

General—

3–1. Lath with Gold Bond Gypsum Lath all (exterior stud walls) (wood furred walls) (stud partitions) (ceiling beams or joists) (stair soffits), etc., which are specified to be plastered.

3–2. Nailing edges of lath shall have at least ⅝ in. bearing on all studs, joists, etc., the length of the lath laid at right angles to studs. Horizontal joints shall abut, breaking joints in each course. Vertical joints of wall shall be staggered with ceiling joints so they do not meet. Vertical joints on opposite side of partition shall be staggered and not occur on opposite sides of the same stud.

3–3. Nails shall be 3d 1⅛-in., 13 gauge, ⅜-in. head blued lathing nails, set not more than 6 in. apart into center bearings and 3 in. apart on edges of board and driven home. Center bearings shall be nailed first, then outer edges.

3–4. Fit lath tight together at all re-entrant angles and corners. Fit lath accurately around all electric boxes and similar openings. Cutting shall be done with sharp hatchet or knife and then breaking over a straight edge.

3–5. Where any gypsum lathed wall, partition or ceiling abuts masonry, strips of Gold Bond Reinforcing Mesh or Gold Bond Expanded Metal Lath weighing 2.5 lbs. shall extend at least 6 in. on masonry and 6 in. on gypsum lath, fastening edge to masonry and to gypsum lath.

3–6. All re-entrant angles shall be reinforced over the gypsum lath with Gold Bond Cornerite extending 3 in. each side. Ends shall abut and not overlap.

3–7. All grounds for gypsum lath shall be ⅞ in. thick (including thickness of lath furnished, installed and specified under Carpentry).

4. Application of Gold Bond Gypsum Lath with Aluminum Foil Insulation

Same Specifications as for standard Gold Bond Gypsum Lath.

5. Application of Gold Bond Metal Lath

5–1. General—Lath with expanded metal lath all studs and beams for (interior stud walls) (wood furred walls) (stud partitions) (ceiling beams) (furred or suspended ceilings) (stair soffits).

5–2. Application to Wood Supports—Metal lath shall be nailed to wood supports and nails shall be not less than 4d or 6d nails or 1¼ in. in No. 14 gauge wire staples driven to a penetration of not less than ⅞ in. and 1 in., respectively, and fastened every six (6) in. along each support. Side joints shall be wired once between supports.

5–3. All rib lath shall be fastened at all ribs to each support and shall be wired at edges once between supports.

5–4. All metal lath shall be fastened to masonry with special hardened steel nails, self-clinching nails or other device best suited to type of construction.

5–5. Attachment to Metal Supports—Metal lath shall be wired to metal supports at intervals not exceeding 6 in. with not less than No. 18 gauge galvanized soft annealed wire and shall always be tied where sheets lap at channels and at edges once between channels.

5–6. Metal Lath shall be erected with the long dimension of lath across the supports; rib lath with the ribs against the supports.

5–7. Lath shall be first applied to ceilings and the sheets carried down 6 in. on side walls and partitions. If metal lath is not used on the ceilings, the lath shall start at the top of the wall and be bent and carried 6 in. on to the ceiling joists so that no joints shall occur at intersection of ceiling and walls.

5–8. On walls, lath shall be started on one stud away from the corner, be bent into corner and carried onto the abutting wall so as to avoid a joint at juncture of walls. Where 3/8-in. ribbed lath is used on ceilings or walls, it shall be butted into all joints, and strips of lath not less than 8 in. wide shall be bent into the shape of an "L" (Cornerite) 4 in. on each side and shall be securely wired along each edge of the sheet but not in corner.

5–9. Where any wall, partition or ceiling abuts masonry, the metal lath shall extend onto masonry at least 6 in. and be well fastened at edges to joints of the masonry.

5–10. Lath shall be placed so that the lower sheet laps over the upper (not vice versa) and shall be securely attached to supports. Nails or staples shall be so placed that they occur where sides of sheets lap at supports.

5–11. Expanded metal shall be lapped at sides not less than 1/2 in. and at ends not less than 1 in. End laps shall occur only over supports.

5–12. Ribbed lath shall be lapped at sides by nesting outside ribs, and at ends, 1 in.

All grounds for metal lath shall be 3/4 in. thick including the lath and will be furnished and installed as specified under Carpentry.

Note: The metal lath specifications have been adapted from those of the Associated Metal Lath Manufacturers, Inc.

Note: No attempt has been made to include specifications for woven wire lath and many other forms of lath. For these, see Manufacturers' Specifications.

6. Metal Arches, Base Screeds, Corner Beads, etc.

6–1. Metal Plaster Arches—Gold Bond Metal Plastering Arches of the No. and shape as noted hereinafter or on the drawings, shall be securely set in position over the lath in accordance with the details. Corner beads at jambs shall join arch beads accurately without break.

6–2. Corner Beads—All external corners, both vertical and horizontal, shall be protected with corner beads, of the types or type specified for their full height or length; same to run from top of base to ceiling, heads or beams or to the spring line of arches.

Note: If beveled, chamfered or rounded corners are desired, make note where these will occur and change paragraph above.

6–3. Metal Picture Moulds—Gold Bond Metal Picture Moulds shall be installed in the following locations. *(List here, or in schedule of finishes, or on drawings, spaces to have picture mould.)*

Picture moulds shall be accurately set, true and parallel with ceiling line and substantially secured.

6–4. Metal Base Screeds or Wainscot Cap—Gold Bond Base Screed shall be installed in the following locations, *(List here, or in schedule of finishes, or on drawings, spaces to have base screed for base, wainscot cap, etc.)*

Note: Where special items such as metal bases, with or without electric wire ways; chair rails; door and window trim, etc., are desired, they should be included in the proper trade specification according to local jurisdiction.

SECTION 4

PLASTERING MATERIALS—BASE AND FINISH COATS

1. Materials and Mixing

1–1. General—All materials used in plastering shall be stored in a dry place above the ground and shall be handled in such a way as to prevent deterioration or intrusion of foreign matter into the plaster.

1–2. Lime, Gypsum and Cement shall be delivered and stored in original packages of the manufacturer. Any materials in containers showing water marks or which have been damaged or materials that have deteriorated shall be immediately removed from the premises.

1–3. Mixing boxes for base coats shall be clean and tight, approximately 3 1/2 x 7 ft. and 12 in. deep, and 2 1/2 x 4 1/2 x 10 in. deep for finish coats and raised 4 in. at one end. Clean mixing boxes after each gauging.

1–4. Machine mixing shall be permitted in machines made for this purpose if they are cleaned after mixing and kept free of plaster from previous gaugings.

1–5. Tools shall be kept clean and shall not be rinsed in gauging water.

1–6. No more material shall be mixed than can be applied in one (1) hour. Do not mix one gauging with another. Plaster shall not be retempered after it has commenced to set.

Note: Clean water and proper mixing following the direction of the Manufacturer are of extreme importance to good work.

1–7. Plaster shall be kept from freezing for 24 hours after application and no finish coat shall be applied to base which is frozen.

1–8. In hot, dry weather, all openings shall be enclosed with muslin screens or windows kept closed to prevent plaster from drying before it has set; after that, windows shall be opened to permit wall to dry quickly.

1–9. All materials for plastering, except sand, shall be as manufactured by National Gypsum Company, Buffalo, N. Y.

2. Water

Water shall be clean and fit to drink, free from oil, acids, alkali or vegetable matter.

3. Sand

3–1. Sand for base coats shall be sharp, clean and free from saline, alkaline, organic or other impurities. It shall be graded from fine to coarse in conformance with the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Pass through six-mesh screen.

3–2. Sand for finish coats shall all pass a No. 12 screen and shall be white, hard, durable grains free from soluble salts or injurious amounts of organic matter.

4. Plaster

4–1. Base Coat Plaster—Shall be Gold Bond Gypsum Plasters.

4–2. Finish Plaster—Shall be Gold Bond Hydrated Lime Putty with Gold Bond Gauging Plaster or Gold Bond Gypsum Prepared Plaster (specify which).

4–3. Keene's Cement—Shall be Best Bros. Keene's Cement.

SECTION 5

BASE COAT PLASTER—(SCRATCH AND BROWN)

1. Cement Plaster

1–1. On Wood Lath—*Scratch Coat*—Shall consist of one (1) part of fibered plaster to two (2) parts by weight of dry sand.

1–1–1. Soak lath thoroughly 12 to 24 hours before, and again an hour or two before, plastering is started.

1–1–2. Apply in two coats, scratch coat to be applied with sufficient pressure to obtain a good key, filling all spaces between the lath and leaving a light coat over lath. Scratch surface thoroughly to secure bond for brown coat.

1–1–3. Brown Coat—Shall consist of one (1) part plaster (fibered or unfibered; specify which) to not more than three (3) parts by weight of dry sand. Second coat shall be applied as soon as scratch coat is set hard and at least ¾ dry, to a true and even surface. Surface of the second brown coat shall be darbied and broomed to afford a bond for the finish coat.

1–2. On Gypsum Lath or Insulation Lath—Scratch coat shall consist of one (1) part fibered or unfibered plaster to not more than two (2) parts by weight of dry sand.

1–2–1. The Gypsum lath shall not be wetted before applying plaster.

1–2–2. Scratch Coat—Apply with sufficient pressure to work plaster well into the joints. Scratch surface to provide bond for the brown coat.

1–2–3. Brown Coat—Same as above for wood lath.

1–3. On Wire or Metal Lath—

1–3–1. Scratch Coat—Shall consist of one (1) part of fibered plaster to not more than two (2) parts, by weight, of dry sand.

1–3–2. First coat shall be applied with sufficient pressure to obtain good key, lightly covering lath. Scratch surface to secure bond for brown coat.

1–3–3. Brown Coat—Same as for wood lath.

1–4. On Brick, Clay Tile or Gypsum Tile—

1–4–1. Soak brick and clay tile and sprinkle gypsum tile before commencing plastering to reduce suction.

1–4–2. Scratch Coat—Shall consist of one (1) part of fibered (or unfibered) plaster to not more than three (3) parts, by weight, of dry sand.

1–4–3. Apply plaster to thickness of grounds (⅝ in.) in two (2) coats. Apply first coat in thin layer to obtain bond and double back immediately with second coat, straighten to true surface with darby and broom surface for finish coat.

2. Gypsum Sanded Plaster

2–1. Gypsum Sanded Plaster shall be applied same as above for Cement Plaster without the use of sand but with the addition of water.

2–2. Special Sanded Plaster—Shall be used for clay and gypsum tile and brick.

3. Gypsum Wood Fiber Plaster

Note: Wood Fibered Plaster is used invariably for one (1) and two (2) coat work, never three (3) coat work.

3–1. On Wood Lath—

3–1–1. Soak lath thoroughly 12 to 24 hours before, and again an hour or two before, plastering is started.

3–1–2. Scratch Coat—(Mixed with water.) Apply with sufficient pressure to obtain a good key, filling all spaces between the lath and leaving a light coat over lath. Scratch surface to secure bond for brown coat.

3–1–3. Brown Coat—(Mix equal parts of plaster and sand.) Apply to thickness to fill out to grounds and broom surface.

3–2. Gypsum Lath—

3–2–1. Gypsum Lath shall not be wetted before applying plaster.

3–2–2. Scratch Coat—(Mixed with water, no sand.) Apply with sufficient pressure to work plaster well into joints. Scratch surface to provide bond for brown coat.

3–2–3. Brown Coat—(Same as for Wood Lath above.)

3–3. On Wire or Metal Lath—

3–3–1. Scratch Coat—(Mixed with water.) Apply with sufficient pressure to obtain good key, lightly covering lath; scratch surface to secure bond for brown coat.

3–3–2. Brown Coat—(Mixed with equal parts of plaster and sand.) Apply to thickness to fill out grounds and broom surface.

3–4. On Brick, Clay Tile or Gypsum Tile—

Note: Do not specify wood fibered plaster for these bases.

4. Concrete Bonding Plaster (For Use on Concrete Surface)

(See notes regarding preparation of surfaces.)

4–1. Scratch Coat—(Mixed only with water.) Apply in one (1) or two (2) coats with as great pressure as possible, to thickness of not more than ⅜ in. and score heavily for bond of finish coat which shall be applied as thin as possible.

4–2. Gold Bond Wood Fiber Gypsum Plaster—May also be used (unsanded) for concrete surfaces in place of Concrete Bonding Plaster.

SECTION 6

FINISH COAT PLASTER

1. Smooth White Finish

(Lime Putty and Gauging Plaster.)

1–1. Hydrated Lime—Allow to soak twenty-four (24) hours.

1–2. Finish Coat—Shall consist of three (3) parts of lime putty to one part of dry gauging plaster by volume equivalent to two (2) parts of dry, hydrated lime to one (1) part gauging plaster by weight, and shall be thoroughly and uniformly mixed.

1–3. It shall be applied after the base coat is hard, set and about dry. Sprinkle surface of base coat with water before applying finish coat when necessary to kill suction.

Note: Do not apply finish on a base coat containing frost.

1–4. Apply in two (2) coats, first light scratch coat and the second time filling in all imperfections and straighten by means of straight edges.

1–5. Trowel surface to desired finish, keeping wet with brush. Bring same to complete troweling before plaster has set. Surfaces shall be perfectly true and even without scratches, ridges, waves, chips, voids, cracks, etc. All angles must be true, sharp, straight and clean.

2. Prepared Gypsum Finish (Using Gold Bond Trowel Finish Plaster)

2–1. Finish Coat—Plaster is ready after thoroughly mixing with water, allowing to soak for ten (10) minutes without hoeing. Make mix very thin and creamy.

2–2. Base coats must be set and hard and about ¾ dry. If too dry, cut suction by sprinkling with clean water.

2–3. Apply finish in three coats; first coat applied as thin as possible to handle and scratch thoroughly into base coat. Let draw for a few minutes, then apply second coat, leveling up. Apply third coat as thin as can be handled, filling in cat faces and imperfections. Let draw and then trowel to smooth surface, applying water sparingly with brush, but not enough to kill face of plaster. Avoid joinings by working top and bottom of wall at same time. Finish coat shall not be less than 1/16 in. or more than ⅛ in. thick.

3. Sand Float Finish (Using Gold Bond Sand Float Finish)

3–1. Using Prepared Sand Float Finish—add water only.

3–2. Base coats must be set and hard, about ¾ dry, before applying finish coat.

3–3. Finish shall be applied with trowel, scratch in thin coat, then double back with second coat to bring to even, level surface free from surface marks. Use float (carpet) (felt) or (cork) to bring to final, even, granular finish. Apply water sparingly with brush, being sure to complete floating before plaster has set. Avoid joinings by working top and bottom of wall at same time. Finish coat shall not be less than 1/16 or more than ⅛ in. thick.

4. Keene's Cement Lime Trowel Finish

4–1. Finish Coat—Shall consist of three (3) parts of Keene's Cement to one (1) part of lime putty by volume (or 100 lbs. dry Keene's Cement to 40 lbs. lime putty).

4–2. Base coats must be set and hard but not thoroughly dry before applying finish coat. If base coat is dry, spray slightly with water but do not soak.

4–3. Apply thin coat well scratched in, then double back and fill out to even surface. Allow to draw for a few minutes, then trowel and brush to a smooth finish, using as little water as possible while troweling. Thickness shall not be less than 1/16 in. or more than ⅛ in.

4–4. Imitation Tile—Marked off for imitation tile, the thickness shall depend on depth of scoring but in no case should be less than 1/16 in. at bottom of scoring.

4–5. Polished Surface—After cement is dry, polish with a cloth to a high polish.

5. Texture Finish (Gold Bond Color Texture)

Over Gypsum Base Coats—Where used over two-coat gypsum plaster, walls should be floated before application of Color Texture to increase yardage and give more uniform job. Dry walls may be sized or dampened to increase yardage and give longer time for texturing.

Over Lime Finish—It is not good practice to apply Color Texture or any other decorative material over fresh lime putty finish, sooner than four months after application of the lime putty. If, however, it is desirable that the walls be decorated at once, Gold Bond Color Texture can be applied as soon as the lime putty is thoroughly set and dry. **The lime must not be sized.**

Color Texture may be applied over old lime putty walls with or without sizing. Follow detailed instructions packed in every carton.

SECTION 7

ORNAMENTAL PLASTER WORK

1. Cornices and Mouldings

1–1. Cornices and Mouldings of size or girth required should be specified, shown on drawings or noted in schedule of finishes.

2. Ornamental or Enriched Work

2–1. Ornamental or enriched work should also be shown on details, character desired described in specifications and noted on schedule of finishes.

3. Models

3–1. All ornamental work shall be executed from models approved by the Architect.

3–2. Models shall be furnished under a cash allowance of ( ) which shall be included by this Contractor in his contract. Models shall be executed by a modeler (selected by) (satisfactory to) the Architect, and the work shall be executed under the direction of the Architect. Models shall be delivered by the modeler at his studio, ready packed, to this Contractor who shall pay all charges of transportation.

3–3. Models shall be furnished to this Contractor without cost to him by the Owner. Models shall have been prepared under the direction of the Owner.

4. Materials

4–1. Materials shall be Gold Bond Moulding Plaster for run mouldings and ornamental work.

4–1–1. *Mixing*—Add water only to Gold Bond Moulding Plaster.

5. Run Work

5–1. Run Work shall be run full, true and even in accordance with Architect's details. All curved work shall be run true to radius.

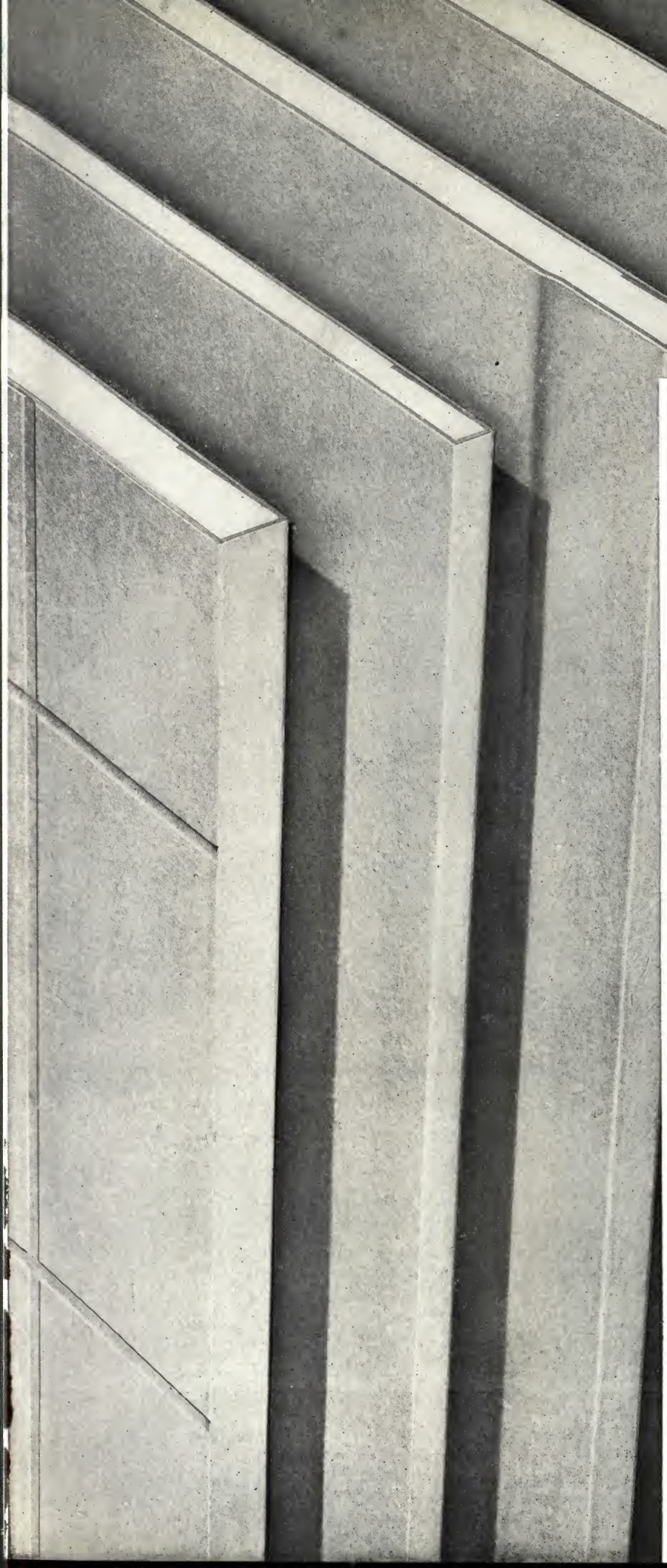
5–1–1. *Templates*—Shall be of metal, clean cut and accurate with the Architect's full-size details.

6. Cast Work

6–1. All enriched work and ornamental work which cannot be run in place on the job, shall be of best quality, cast from gelatine moulds. All work shall be properly backed, cast solid or hollow, and properly reinforced with wood or iron, and shall be securely stuck and held in place with copper wire.

6–1–1. Cast ornamental coffered ceilings shall be cast in sections and reinforced so that sections can be secured to hangers or other support from ceiling slabs, etc.

6–1–2. All cast work shall be set true in surface and alignment and any rough spots shall be finished and sand papered and left perfect, ready for decoration.



SECTION THREE

GOLD BOND GYPSUM WALLBOARDS

Pages 42-45

GOLD BOND GYPSUM WALLBOARD

Pages 46-47

GOLD BOND GRAIN BOARD
Gumwood
Mahogany
Knotty Pine

Page 48

GOLD BOND TILE BOARD

Pages 49-50

GOLD BOND GYPSUM SHEATHING

Pages 51-52

GOLD BOND GYPSUM WALLBOARD AND LATH WITH ALUMINUM FOIL INSULATION

Pages 53-54

GOLD BOND ROCK WOOL INSULATION

GOLD BOND GYPSUM WALLBOARD

The Pioneer Lightweight Gypsum Wallboard, Made Under Exclusive Patents . . . Fireproof, Non-Warping Three Finishes: Plain, Tile, Imitation Wood-Grain

GYPSUM wallboard in its present highly efficient form is relatively a new-comer to the building products field. Prior to 1925, when NATIONAL GYPSUM COMPANY was organized, gypsum boards weighed about 2000 pounds per thousand square feet. They were brittle, breaking easily, and chipping along the nailing edge. Because of their excessive weight and fragility, their use was limited.

Gold Bond Changes Industry

Then in 1925, came Gold Bond with patents covering a revolutionary type of gypsum wallboard. The new product weighed 1700 pounds against the old 2000 pound weight . . . it was much stronger . . . its millions of tiny air cells gave insulation never before dreamed of in gypsum wallboard. Overnight gypsum wallboard became a practical building material, with a hundred-and-one uses in remodeling homes, stores, factories, offices, garages, and all types of building.

New Patents for Lighter Board

Years of pioneering followed, during which time Gold Bond continued to improve the quality of its board. Gold Bond engineers were unceasingly at work in an endeavor to further lighten and strengthen gypsum wallboard. They succeeded. And in April, 1934, United States patent numbers 1,932,956 and 1,946,077 were issued covering the manufacture of a gypsum wallboard of extremely light weight plus super-strength.

This important improvement was brought about through a unique method of greatly increasing the number of tiny, dead air cells in the gypsum core. The new board, although lighter in weight, is stronger, more flexible or resilient, higher in insulation value. And it may be nailed close to the edge without splitting.

Exceeds Federal and ASTM Specifications

The National Gypsum Company guarantees its gypsum wall board products to exceed by 100% the strength requirements of Federal Specifications SS-W-51 A and ASTM specifications C-36 for gypsum wallboard, and to meet all other requirements of these specifications.

New Products Introduced

Following the perfection of standard Gold Bond Gypsum Wallboard, Gold Bond Gypsum Tile was announced, followed by Gold Bond Gypsum Wallboard with Aluminum Foil Insulation and Gold Bond Grain Board, which in texture and grain gives the effect of wood paneling at a great saving in cost. The latter product is made in three distinctive finishes—Gumwood, Mahogany and Knotty Pine and comes already lacquered.

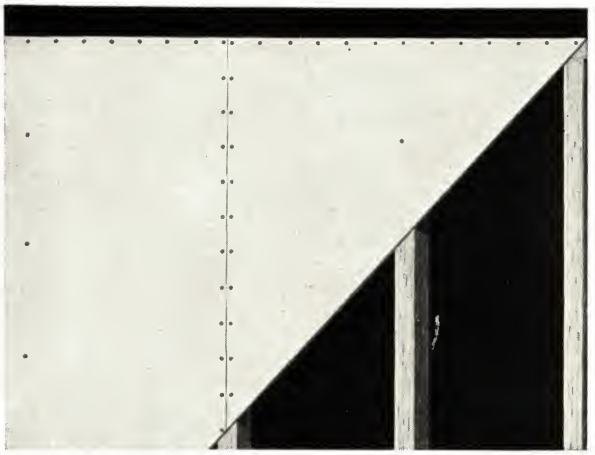
In addition to the standard board with Square Edge as pictured below, Gold Bond Board is also made with Recessed Edge and T. and G. Edge as shown on the next page. There are three thicknesses: ¼ inch, ⅜ inch and ½ inch.

For Gold Bond Gypsum Wallboard and Lath with Aluminum Foil Insulation, See Pages 51 and 52

A panel of ⅜ in. Gold Bond Gypsum Wallboard showing the distinctive edge label

Application

The boards must be nailed at all edges to studs and joists. They are first nailed to the center supports and then the outer edges. Headers (extra 2x4's) must be used where necessary to provide a solid backing at all panel edges.



Nails at all Edges are spaced 3 inches apart and ⅜ inch in from Edge of Panel. Nails are spaced 9 inches apart on Intermediate Wall Studs and 6 inches apart on Intermediate Ceiling Joists.

Fire Resistant

Because it is made of solid gypsum rock, Gold Bond Gypsum Wallboard is highly fire resistant. In repeated blow-torch tests, the material has shown its ability to resist fire. It is both non-inflammable and incombustible and retards the transmission of heat. Tests have shown Gold Bond Fire Resistance to be unexcelled by any other gypsum wallboard.

Sizes and Thicknesses

Thickness	Width	Length
¼ in. Square Edge	48 in.	4, 5, 6, 7, 8, 9, 10, 11, 12 ft.
⅜ in. Square Edge	48 in.	4, 5, 6, 7, 8, 9, 10, 11, 12 ft.
½ in. Square Edge	48 in.	4, 5, 6, 7, 8, 9, 10, 11, 12 ft.
⅜ in. Recessed Edge	48 in.	8, 9, 10 ft.
½ in. Recessed Edge	36 and 48 in.	8, 9, 10 ft.
½ in. T. & G. Edge	48 in.	8, 9, 10 ft.

Decorative Surface

The tough, smooth manila covering offers an ideal surface for painting, papering, or texture finish after the joints have been properly prepared. It has a highly calendered surface of ivory color, highly sized for the finest decorative effects.

Three Joint Treatments

Gold Bond Gypsum Wallboard may be panelled or joints filled and treated for painting, papering, or texture finish, eliminating entirely the panelled wall-board effect. Gold Bond offers three methods for finishing joints.

Treatment No. 1—Buttering the Intersections with Gold Bond Finisher.

No. 1. Gold Bond Finisher

For an inexpensive and quick job, Gold Bond Finisher may be used for filling the intersections. Supplied in handy 5-lb. packages. Is mixed with water to a putty consistency, following the directions on the package. A putty knife is used to fill joints, nail heads, etc. Then it is smoothed off, let dry and sandpapered.

If the wall is to be painted or textured, size all filled joints and nail heads.

No. 2. Gold Bond Tape Joint System

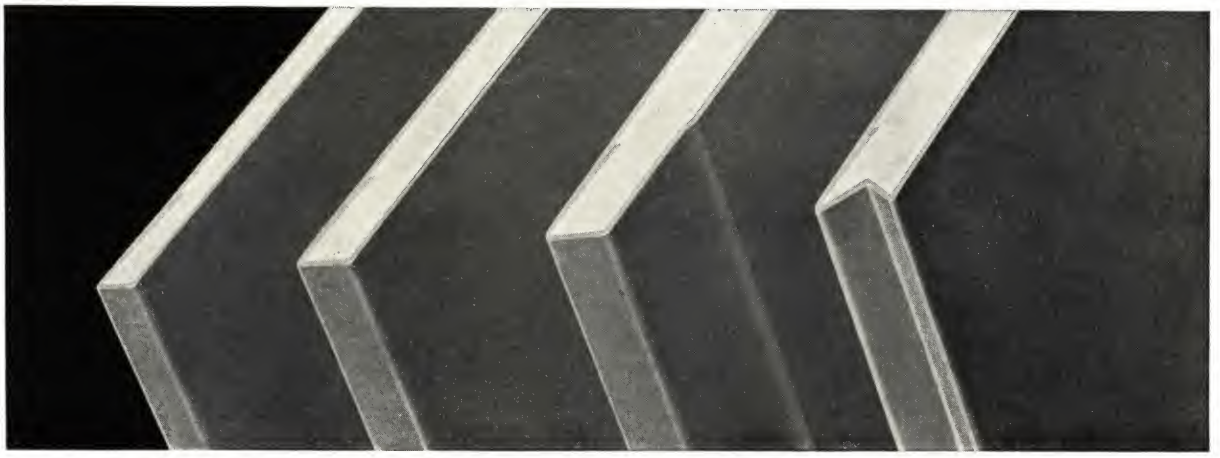
An improved system for finishing intersections which consists of using a woven and processed cloth fabric 2″ wide, together with a special cement.

Fill and "butter" the joint with cement, press the tape into place with putty knife which automatically forces some of the cement through the mesh tape. Smooth off and sandpaper to a feather edge . . . Each carton contains one 250′ roll of tape and sufficient cement for the tape.

No. 3. Gold Bond Ideal Reinforced Joint System

Recommended for the highest type of job. This system not only hides the intersections effectively, but in addition reinforces the joints as well. For further information, see next page.

Gold Bond Wallboard may be obtained in these three edges. Consult the above table for sizes and thicknesses.



Square Edge **Square Edge** **Recessed Edge** **T. & G. Edge**

GOLD BOND IDEAL REINFORCED JOINT SYSTEM

An Improved Method of Covering the Joints of Gold Bond Gypsum Board to Obtain a Seamless Wall

Makes the Treated Joints Even Stronger Than the Board

ALTHOUGH there is practically no expansion or contraction in the wallboard, there is always a certain amount of shrinkage and settling in wood framing, capable of causing cracks at the joints of the wallboard. The joints usually are filled with gypsum filler and sometimes reinforced with various materials and tapes.

After years of experiments, National Gypsum Company perfected this new system of joint treatment which has proven through actual tests to be the most effective method of completely concealing the joints of gypsum wallboard.

Extreme Strength of Joint

The joint is stronger than the board. This is accomplished by the use of Gold Bond Ideal Joint Reinforcing, a fabric which has a tensile strength of 60 lbs. per sq. in. and is identical with that used on lighter-than-air craft.

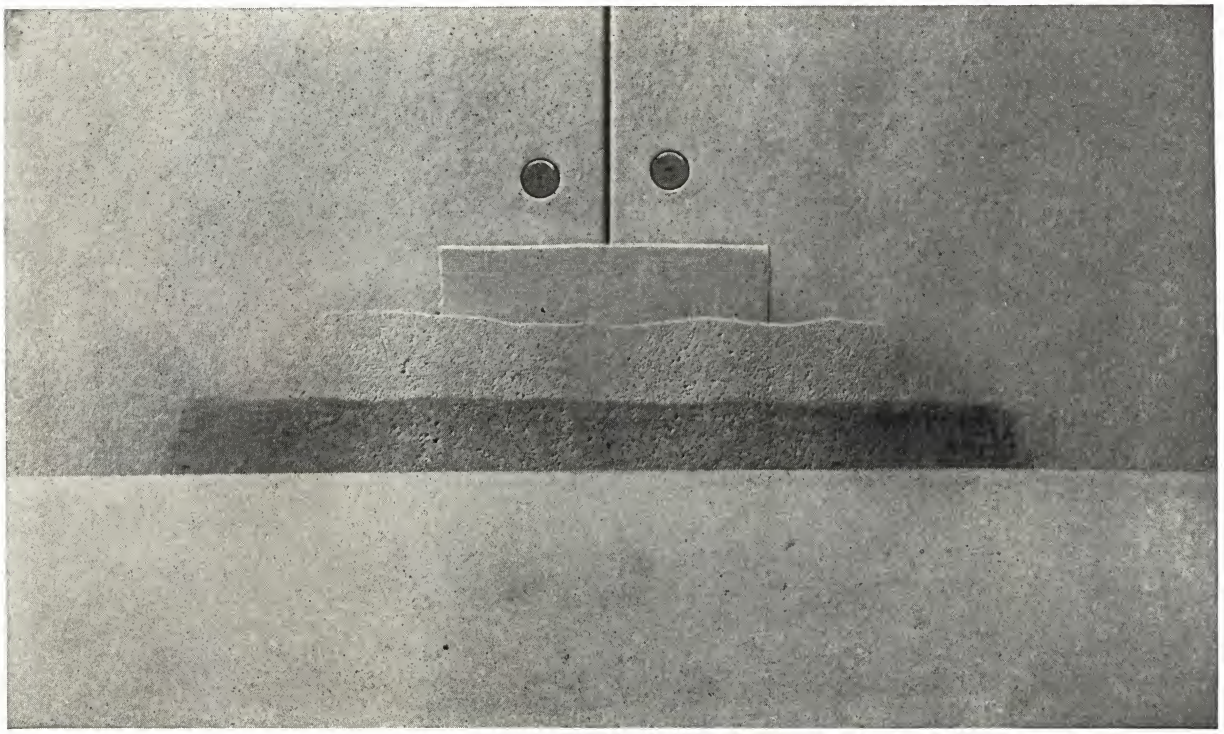
In this system, if the edges of the boards are butted close together, it is not necessary to fill the joints. Gold Bond Ideal Joint Reinforcing is then glued over the joint with a special casein glue, and covered with a special cement. The reinforcing although very strong is thin and when the joint is completely finished as directed it is practically imperceptible. Patent application is in process covering this system.

Two Handy Size Cartons

Standard carton contains:
- 250′ roll reinforcing tape
- 1-lb. can casein glue
- Enough cement to cover tape

Small carton contains:
- 60′ roll reinforcing tape
- ¼-lb. can casein glue
- Enough cement to cover tape

A Gypsum Wallboard Intersection Treated with Gold Bond Ideal Reinforced Joint System



The progressive steps followed in applying Gold Bond Ideal Reinforced Joint System. First the joint is painted with a special glue. Next, the tape is applied and given another coating of glue. Then covered with a special cement, sandpapered, sized and decorated.

STANDARD SPECIFICATIONS

FOR APPLICATION OF GOLD BOND GYPSUM WALLBOARD

1. Scope of Work

List all walls, ceilings and other surfaces which are to be covered with Gold Bond Gypsum Wallboard.

2. Framing

2–1. Framing of all studs and joists shall be 16 in. on center, unless for bearing partitions which are 12 in. on center, and shall follow general good practice.

2–2. Headers of 2 x 4 in. shall be provided in ceilings and wherever else required to provide proper nailing for all ends of Gold Bond Wallboard . . . also between studs for baseboards, wainscot, or other finish, and for furring to take wood beams, cornices, etc.

2–3. For old plaster ceilings, nail 1 x 2 in. furring strips over the plaster, to provide proper nailing for ends and intermediate support of boards, using 8d nails.

3. Material

3–1. Wallboard—Where wallboard is referred to hereinafter, it shall mean Gold Bond Gypsum Wallboard as manufactured by National Gypsum Company, Buffalo, N. Y.

3–2. Gold Bond Wallboard shall be (¼ in.) (⅜ in.) (½ in.) thick in lengths to run full height on walls from floor to ceiling and to size of panels or to headers on ceilings.

Note: (Where ½ in. Gold Bond Wallboard with T. and G. Edge is used for walls, it shall be applied at right angles to direction of studs.)

3–3. Nails for ¼ in. and ⅜ in. Gold Bond Wallboard shall be 3d, blued nails 1⅛ in. long for use over studs, joists or beams. For ½-in. board use 4d nails 1⅜ in.

3–4. For directly over old plaster use 6d cement coated common nails 1⅞ in. long.

3–5. Where ceiling has floor above use 4d cement coated nails, 1⅜ in. long for ceiling wallboard.

4. Handling and Preparation

4–1. Receiving Material—Wallboard shall be piled flat in center of room with Gold Bond label up except first board which shall be turned down.

Note: (Wallboard shall not be delivered on the job until doors and windows are in place.)

4–2. Handling—Wallboard shall be handled with long edge up.

4–3. Sawing and Cutting—All required cutting of wallboard shall be done with a saw unless joints will be covered by trim. Sawing shall be done with sharp handsaw with back of board placed down and supported close to sawed edge. Other cuts may be made by scoring with sharp edge of hatchet or chisel and breaking over straight edge. Bevel the face side of cut edges and mill cut end with coarse sand paper so that no rough paper edges will remain, unless covered by trim. Recut the ends of all wallboards which have been damaged by handling.

5. Application

5–1. Inspection—Before applying wallboard see that all edges and ends are perfect and all ends and cut edges are face beveled and that faces of boards are undamaged.

5–2. Wallboard, with back toward studs, shall be applied directly to studs, beams, etc. Horizontal joints shall be made only over framed headers.

Note: (Board shall be butted together if Gold Bond Reinforced Joint System is to be used or separated ⅛ in. if joints on cut ends are filled.)

5–3. Nailing—Wallboards shall be nailed first to intermediate studs or beams and nails driven straight in, with heads set slightly below the surface without using nail set. Nails shall be spaced 9 in. apart on intermediate studs of walls and 6 in. apart on ceilings. Nails shall be spaced 3 in. apart and ⅜ in. back from all edges and ends. Boards shall first be tacked on edge to hold to adjoining edge and then shall be nailed first to each intermediate support working from center toward ends and finally sides and ends shall be nailed, with nails opposite each other on edges.

5–4. Ceilings—Ceiling boards shall be erected first and length of board shall be at right angle to ceiling beams. Panels shall be in one piece as far as possible but if joints occur they shall be broken unless covered with strips or wood beams.

5–5. Walls—Wallboard shall be applied in full lengths from floor to ceiling, standard board to be parallel to framing, ½ in. T. and G. board at right angle to framing with groove edge down. Edges shall be squared with adjacent wall and ends shall fit snugly against ceiling boards, scribing where necessary. Cut in fillers over door and window openings last. Vertical joints on opposite sides of partitions shall not come opposite each other on the same stud.

FOR APPLICATION OF GOLD BOND IDEAL REINFORCED JOINT SYSTEM

General Note—Erect Gold Bond Gypsum Wallboard according to standard specifications. Joints shall be butted together. If panels have been improperly applied and there is a space of over ⅛ in. between panels, this space must be filled with Gold Bond Finisher (not joint cement) and allowed to dry before starting to apply Gold Bond Ideal Reinforced Joint System.

Preparation of Glue—Glue shall be Casco Casein Glue as received in original container. Mix glue with four parts of water by weight (2 qts. of water to 1 lb. of glue) in clean metal container. Allow to stand 20 minutes and stir before using.

Application of Glue and Tape—Paint joint with glue covering an area the width of the tape, using a 2-in. paint brush. Apply tape over joint starting at top of vertical joints and lining up to get same area of tape on each side of joint. Cut over straight edge at end of joint. Wipe down with cheese-cloth to insure tight bond and to remove any wrinkles in tape. Then apply another light coating of glue over tape with brush and let joint dry thoroughly.

Application of Joint Cement—Mix cement with water in clean metal container to a pasty consistency and allow to stand one-half hour before using. Apply thin coating over tape, using a wide (3-in.) knife. When cement is thoroughly dry, sand smooth and to a feathered edge with coarse sandpaper or emery cloth, followed with fine sandpaper.

If surface is to be painted or finished with Gold Bond Color Texture in one of the tints, first size the joint to "kill" suction and prevent variations in color along the intersections. (Size with shellac cut with equal parts of alcohol.) If white texture is to be used and subsequently glazed, it is not necessary to size the joints.

GOLD BOND GRAIN BOARD

All the Richness of Expensive Wood Paneling at a Fraction of the Cost . . . Three Finishes: Gumwood, Mahogany, Knotty Pine

Gold Bond Grain Board is standard gypsum board with an imitation wood grain surface that defies detection upon casual inspection. Made in three distinctive finishes—Gumwood, Mahogany and Knotty Pine.

In addition to its rich-looking grain surface, Gold Bond offers these important advantages over real wood: the solid gypsum core is fireproof and unaffected by dampness. Won't expand, contract, warp or peel. Saws like lumber and may be nailed without splitting. Installations made years ago, show not the slightest tendency toward fading.

Where Used

Millions of feet of Gold Bond Grain Board have been used in offices, stores, restaurants, taverns, living rooms and dining rooms in private homes, window backgrounds . . . wherever an impressive but inexpensive wood panel effect is desired.

For Summer Cottages and Recreation Rooms

The low cost of Gold Bond Grain Board—only a fraction as much as real wood—permits its use for even low priced summer cottages and recreation rooms. Besides offering a durable interior finish that is very unusual and beautiful, the cellular gypsum core provides effective insulation so much desired in summer homes. For basement recreation rooms, Gold Bond is strongly recommended . . . it is not affected by cellar dampness and won't warp.

Supplied With Lacquer Finish

Made with a protective lacquer finish which can easily be cleaned with a damp cloth. No further decorative treatment is necessary, but like real wood, additional finishing will bring out its full richness. The simple instructions for further decorative treatment are given on the next page.

Sturdy panels of Gold Bond Grain Board are nailed to the wood framing or, if modernizing, right over the old material. Old fashioned rooms with cracked walls and ceilings can be quickly converted into attractive up-to-the-minute interiors, and at surprisingly low cost.

Thickness and Sizes

Standard thickness, 3/8 in. (Special thickness, 1/4 and 1/2 in.) Gumwood and Mahogany panels are made 32 in. wide and 8, 9, and 10 ft. long. Knotty Pine, 48 in. wide and 8, 9, and 10 ft. long. All panels are carefully wrapped, two to a bundle.

A beautiful room, delightfully different . . . Gold Bond Knotty Pine.

APPLICATION INSTRUCTIONS

Nailing

Gumwood and Mahogany (32 In. Wide)—Space studs 16 in. on centers, using headers (extra 2x4's) where necessary to provide firm nailing surface behind the four edges of each panel. Nails should be spaced 3 in. apart and ⅜ in. in from edge of panel. On sidewalls *only*, it is not necessary to nail the center of the panel to the intermediate stud—this middle stud merely serving as a brace or support behind the center of the panel. Butt the panels together. Nail along the four edges, beginning at the center and working towards the top and bottom.

Knotty Pine (48 In. Wide)—Follow above procedure except the panels must be nailed to the intermediate or middle studs as well as at the four edges. Do the intermediate nailing first beginning at the center of the panel and working towards the top and bottom. Use 4d finishing nails for the intermediate nailing driven at a 45 degree angle. Use care not to mark the board with the hammer. Intermediate nails should be driven just a trifle below the surface so the heads can be concealed with linseed oil putty mixed with stain.

Nails—For new work, use 3d cement coated flat-head nails 1⅛ in. long around the edges. Over old material use 6d cement coated flat-head nails 1⅞ in. long. Drive the nails "home" but do not use a nail set. For intermediate nailing, use 4d finishing nails.

Paneling

Gold Bond Grain Board may be used with or without decorative mouldings over the joints. To obtain a well balanced paneled effect, it is well to prepare a plan in advance for the carpenter to follow.

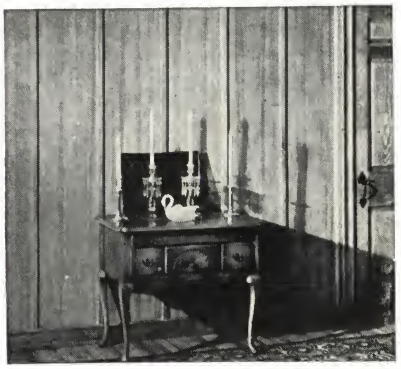
Or if a paneled effect is not desired, the Grain Board panels can be butted together so that the joints are hardly visible. For the latter treatment, finishing nails should be used around the edges instead of flat-head nails and the nailheads concealed with linseed oil putty mixed with stain.

Decoration

As Gold Bond Grain Board comes already lacquered, no further decoration is needed. May be cleaned by going over it lightly with a damp cloth. Like real wood, additional finishing will, of course, improve the richness. Always apply a priming coat (equal parts of white shellac and alcohol). Follow with a coat of clear (flat or dull) varnish or an emulsified floor wax. The dull varnish finish is particularly recommended. Rub down lightly between coats with steel wool.

A Close-up Showing the Distinctive Wood Graining

Three Home Views Created by Joseph Platt of Delineator Showing Treatments Obtainable with Gold Bond Grain Board



Dining Room

Sun Room

Recreation Room

GOLD BOND TILE BOARD

A Gypsum Tile Board in Large, Easily Applied Panels

Made Under Gold Bond Patents Saves 90% Over Ceramic Tile

Section of Gold Bond Tile Board Showing Embossed Tile Effect. Actual Size of Tile is 4 Inches Square

GOLD BOND TILE BOARD is made under the same processes as Gold Bond Gypsum Wallboard except that the surface is indented to form tile, four inches square. Is fireproof; will not crack, expand or contract and takes a beautiful enameled finish.

Gold Bond Tile Board is ideal for new and modernizing work and costs but a fraction as much as ceramic tile. Saws like lumber and can be applied quickly with little muss or dirt.

An Ideal Combination—Gold Bond Tile Board for the Wainscot and Standard Gold Bond Board decorated with Gold Bond Color Texture or Craftex for the upper walls and ceilings . . . Inexpensive . . . Permanent . . . Washable.

Thickness and Sizes

Panels are ⅜ in. thick and supplied 4 ft. wide and 6, 7, 8, 9 and 10 ft. long. In kitchens and baths of average size, one panel will extend the full length of the wall with no joints except at the corners where a quarter round mould is generally used.

Application and Decoration

Nail panels directly to wall studs or if remodeling, apply over present material. Use flat head nails along the edges, spaced 3 in. apart and ⅜ in. in from edge. Nails should be at least 1⅛ in. long or approximately 2 in. if used over old material. Panels must also be nailed to intermediate studs with finishing nails, these nails to be spaced 8 in. apart (or every two tiles from the top to the bottom of panel). Drive nails "home" but do not use a nail set.

Apply a priming coat of varnish size. Then a coat of paint, followed with a second coat of paint or enamel. Rub down between coats with fine sandpaper or steel wool.

Contrasting Colored Indentations

Give surface a coat of flat paint or enamel undercoating of the finished color desired for the indentations. Then apply a coat of enamel in some contrasting color, brushed on very thin. When enamel has set, wipe out the joints with any narrow tool such as a ruler, match, or ordinary meat skewer. It is advisable to stretch a piece of cloth over the end of the tool to absorb the enamel that is wiped out of the indentations, taking care to keep the cloth clean. This brings out the color of the base coat or undercoating at the indentations and produces an attractive two-color job.

GOLD BOND GYPSUM SHEATHING

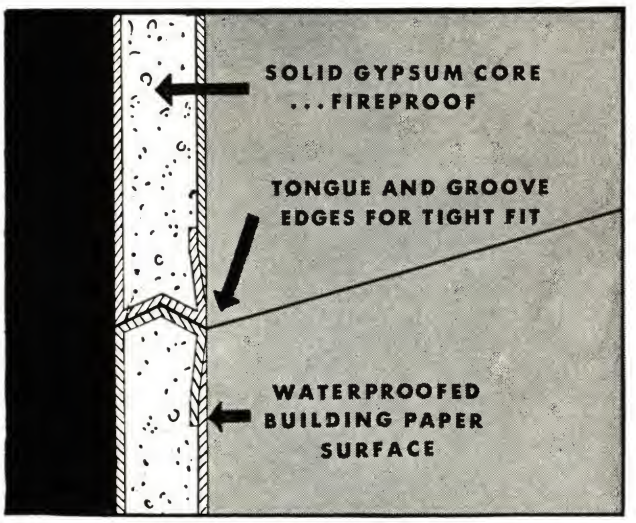
For Use Under Wood Siding, Clapboards, Brick-Veneer, Stone or Stucco . . . Full 1/2-inch Thick . . . Fireproof Solid Gypsum Core Real Fire Protection for the Wood Frame Home

Description

GOLD BOND GYPSUM SHEATHING is a sturdy, knotless sheathing material, full ½ in. thick. The core is solid gypsum rock, encased in heavy, waterproofed building paper with tongue and groove edges. Is rapidly becoming the leading sheathing material because it offers these distinct advantages:

Fireproof	Won't warp, expand or contract
Water-resistant	No building paper required
Windproof	Won't absorb moisture and freeze
Helps insulate	Saws like lumber
Adds structural strength	Costs less . . . Saves labor

Gold Bond Gypsum Sheathing is absolutely non-inflammable and incombustible. It insures permanent fire protection for wood frame houses at no extra cost. Solid gypsum core resists water effectively and additional protection is provided by the heavy, waterproofed paper on both sides.



Gold Bond Sheathing, Full ½-In. Thick, with Core of Solid Gypsum Rock. Long Edges Are Tongue and Groove, Which Make Snug Windproof Joints. Ends Are Perfectly Square.

Easier to Apply

The large sturdy panels go up in no time—an 8-ft. length covering a span of 6 studs spaced 16 in. on centers. Use 10½-gauge flat head roofing nails 1¾ in. long.

Contractors report a further saving can be effected in applying the panels, by working from the inside of the house, thereby eliminating the usual outside scaffolding.

Large, Sturdy Panels of Gold Bond Sheathing Go Up in No Time, an 8-Ft. Length Covering a Span of Six Studs Spaced 16 In. on Centers. No Random Lengths and No Waste. Building Paper Is Not Required.

Won't Warp or Buckle

There is positively no movement in the panels regardless of climatic changes or extreme weather conditions. No possibility of shrinkage, leaving open gaps along the joints.

Windproof . . . Helps Insulate

The infiltration of hot or cold air is effectively stopped by Gold Bond Gypsum Sheathing. This can easily be appreciated when one considers:

First—The wide panels (2 ft.) greatly reduce the number of joints and these are permanently snug because of the tight-fitting tongue and groove edges.

Second—The panels are knotless. No danger of knots falling out after application, leaving holes for wind to enter.

Size, Thickness, Weight

Sizes: 2 ft. x 8 ft., 2 ft. x 6 ft. 8 in.

Thickness: Full ½ inch.

Weight: Approx. 1900 lbs. per M sq. ft.

Edges { Long edges T. and G.
Short edges square

One thousand square feet actually covers one thousand square feet of surface. No random lengths and no waste.

GOLD BOND GYPSUM SHEATHING (Continued)

Adds Structural Strength

As indicated by the following chart, ½ inch Gold Bond Sheathing adds greater structural strength to a building than other sheathing materials applied horizontally or diagonally.

Comparative Structural Strength

GYPSUM SHEATHING vs. WOOD SHEATHING
Tests Made at Armour Institute of Technology
(Test Panels 4'x8' . . . made of yellow pine 2x4's spaced 16" on centers)

LOAD IN POUNDS	YELLOW PINE SHEATHING 7/8" x 8"		GYPSUM SHEATHING
	Applied Diagonally	Applied Horizontally	Applied Horizontally
	Deflection in Inches	Deflection in Inches	Deflection in Inches
100	.01	.10	.00
800	.10	2.56	.07
2000	.29	10.94	.20
2800	.54	11.72	.32
3600	1.07		.54
4000			.84
Load at end of test	3925 lbs.	3150 lbs.	4425 lbs.

Builders everywhere are swinging over to this fireproof sheathing. Note the trim piles of Gold Bond in the foreground — absolutely uniform in size and thickness. No danger of "losing" them for kindling wood because they won't burn.

Specifications

(1) Sheathing and Roof Boards—Sheathing and Roof Boards shall be Gold Bond Gypsum Sheathing as manufactured by National Gypsum Company, ½ in. thick, 2 ft. wide, 8 ft. long (or 6 ft. 8 in. long). Nails shall be 1¾ in. long, No. 10½ gauge, galvanized flat head roofing nails. Protect panels from the weather until ready for use.

(2) Application—Apply panels of Gold Bond Sheathing directly to supports with lengths at right angles to the studding and rafters with groove edge down and trade-mark in.

Wherever the square ends shall be butted together a support shall be provided and the tongue and groove sides shall be fitted tightly together. Stagger vertical joints.

Panels shall be nailed to each intermediate support and at the ends, the nails to be spaced 4 in. apart and ⅜ in. in from edge at the ends. (49 nails to each 2x8 ft. panel.) Building paper shall not be used over Gold Bond Sheathing.

(3) Siding—Apply siding at right angles to studding, directly over Gold Bond Sheathing. Siding shall be nailed into the wood supports (not to the sheathing) and nails shall be long enough to go through the sheathing and into the studs.

(4) Shingles—Apply 1x2 in. wood furring strips over Gold Bond Sheathing at right angles to studding, to take shingle weathering specified. Furring strips to be nailed securely through the sheathing to the studding.

(5) Stucco—Use 2.5 lb. or 3.4 lb. Galvanized Gold Bond Cup Lath over the sheathing. Nail securely through the sheathing to the wood framing.

(6) Stone or Brick—Wall ties shall be nailed securely through the sheathing to the wood supports.

Showing Gold Bond Gypsum Sheathing, Used with Various Types of Exterior Finish

GOLD BOND GYPSUM WALLBOARD AND LATH WITH ALUMINUM FOIL INSULATION

Combines Reflective Insulation with Fireproof Gypsum Wallboard and Lath, Providing Maximum Home Insulation at a Fraction of the Normal Cost

SCIENTISTS have recently discovered the practical application of the principle that *heat waves, like light waves, are reflected by a polished metal surface.* So effective is this new type of insulation, that already it has been adopted by the United States Navy, leading railroads, and manufacturers of refrigeration equipment. Many foremost architects and building experts stand ready to vouch for its superiority over previous types of insulation.

Increased Year-Round Comfort

During severe hot weather, aluminum foil insulation has proved its ability to keep inside temperatures 10 to 20 degrees or more below outside. While during the average heating season it may be counted upon to save from $40 to $100 in fuel bills for the owner of the average size house. Yet aluminum foil insulation costs considerably less than other types.

One of its most striking features to the man accustomed to the weight and bulk of ordinary insulating materials, is the almost total absence of weight in aluminum foil. For instance, on the U. S. S. New Orleans less than 2000 pounds of aluminum foil was used instead of more than 100,000 pounds of bulky insulation. The ocean liners Rex and Comte di Savoi carry only 1/60th the normal insulating weight because of aluminum foil. While new streamlined, air-conditioned trains, refrigerator cars and trucks are insulated more effectively and permanently, with a welcome saving in space and weight, through aluminum foil.

Mirrored Surface Reflects Heat Waves

A combined plaster base and insulating lath, erected in one operation at a considerable saving. Approximately 21% more efficient than fibre insulating board under like conditions.

A Combined Plaster Base and Insulation

Gold Bond Aluminum Foil Insulation Lath is standard Gold Bond Gypsum Lath, on one side of which is laminated a mirror-like sheet of pure polished aluminum. Insulation and plaster base are combined into a thoroughly practical, fireproof, easily erected product. This double purpose lath costs but little more than ordinary gypsum lath. An additional saving is made in application where the only operation is nailing up the lath.

Gold Bond Aluminum Foil Insulation Board is sturdy, fireproof gypsum board with foil firmly laminated on one side; brings two savings—(1) in first cost, (2) in application.

Insulation Values

Numerous tests have shown the remarkable effectiveness of this new type of insulation. It is based on the principle that a polished metal surface—in this case polished aluminum selected because of its ability to withstand corrosion—will reflect 95% of all radiant heat. It blocks heat entry in summer—stops heat loss in winter.

At this point it is well to remember that the only active agent involved in insulation is *heat energy.* As heat energy, like water, always seeks a level or balance, heat energy is passed from the warmer to the colder body.

In Summer, heat energy from outside passes into the cooler interior of the house. The amount of heat flow of course, depending upon degree of insulation. In Winter, the warmer furnace heat inside the house passes outward to the colder air. Here again heat loss depends upon amount of insulation.

Approximately 75% of all heat traveling through walls and ceilings of buildings is radiant heat, or heat waves. This is distinguished from convected heat, or moving hot air, and conducted heat, or heat energy moving along a solid or liquid body.

It is the passage in or out of this radiant heat which is 95% stopped by Gold Bond Aluminum Foil Lath and Wallboard.

Comparative tests on Aluminum Foil Board and Lath show this material to be approximately 21% more effective than fibre insulating board when employed in identical wall construction.

NATIONAL GYPSUM COMPANY

"Plus Values" of Gold Bond Aluminum Foil Insulation Lath and Wallboard

Chart Showing Comparative Insulation Values

Material	Conductivity	Resistivity	Authority
½" Rigid Fibre Board	0.66	1.52	A.I.A. File 37 Table V
½" Flexible Blanket	0.54	1.85	"
⅜" Plaster Board	3.73	0.27	"
¾" Metal lath and plaster	4.40	0.23	"
⅜" PLASTER BOARD plus FOIL (over ¾" air space)	0.41	2.44	"
Over ¾" air space faced one side with aluminum foil	0.46	2.17	
(Above values based on thickness as stated and based on "Thermal Insulation of Buildings"—AIA File 37)			
Wall Section with Fibre Insulation Board (temp. difference 70-72° F.)	.379	2.64	A.D. Little Inc.
Same section as above with Gold Bond "Reflectal" Insulation Board	.298	3.36	"

Structural Characteristics—Gold Bond Aluminum Foil Lath and full length board have all the well known structural characteristics of patented Gold Bond Gypsum Wallboard—including exceptional strength, lightness and ease of handling.

Fireproof Characteristics—The fire hazard of most types of ordinary insulation is completely avoided. It is made of pure gypsum—as fireproof as rock itself.

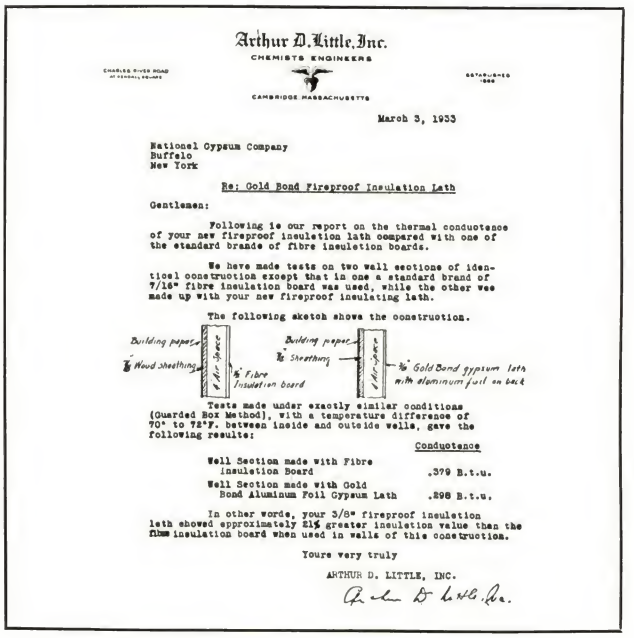
Moisture Resistance—An especially important feature is absolute freedom from warping, buckling and cracking — common enough occurences in fibre insulating lath and board.

Permanence—The solidity and permanence of Gold Bond Gypsum Lath and Board has long ago been amply proved. Recent strenuous tests and others taken over a period of years, fail to show any decline of efficiency with age in aluminum foil. This is explained by the fact that a reflective oxide coating forms on aluminum, in no way detracting from the insulating effect, but preventing corrosion even in the vicinity of large steel mills where the air is loaded with corrosive sulphur fumes.

Plaster Base—The patented indented surface found only on Gold Bond Gypsum Lath is the perfect plaster base, providing suction necessary for ideal application conditions.

Application

Gold Bond Aluminum Foil Insulation Lath and Wallboard are applied with metal side against framing members. Space between studs and joists is essential. Do not apply direct to another flat surface.



Arthur D. Little, Inc.
CHEMISTS ENGINEERS
CAMBRIDGE MASSACHUSETTS

March 3, 1933

National Gypsum Company
Buffelo
New York

Re: Gold Bond Fireproof Insulation Lath

Gentlemen:

Following is our report on the thermal conductence of your new fireproof insulation lath compared with one of the standard brands of fibre insulation boards.

We have made tests on two wall sections of identical construction except that in one a standard brand of 7/16" fibre insulation board was used, while the other was made up with your new fireproof insulating lath.

The following sketch shows the construction.

Tests made under exactly similar conditions (Guarded Box Method), with a temperature difference of 70° to 72°F. between inside and outside walls, gave the following results:

	Conductence
Wall Section made with Fibre Insulation Board	.379 B.t.u.
Wall Section made with Gold Bond Aluminum Foil Gypsum Lath	.298 B.t.u.

In other words, your 3/8" fireproof insulation lath showed approximately 21% greater insulation value than the fibre insulation board when used in walls of this construction.

Yours very truly

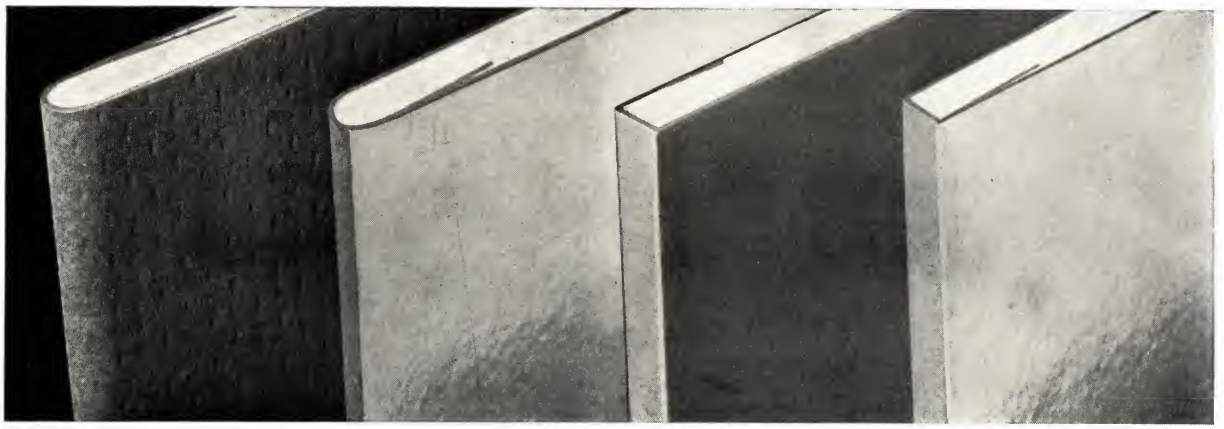
ARTHUR D. LITTLE, INC.

Sizes and Thicknesses

GOLD BOND ALUMINUM FOIL INSULATION LATH
⅜ in. thick. 16x32 and 16x48 in.

GOLD BOND ALUMINUM FOIL INSULATION BOARD

Thickness	Width	Lengths
¼, ⅜, ½ inch Sq. Edge	48 in.	6, 7, 8, 9, 10, 11, 12 ft.
½ in. T. & G. Edge	48 in.	8, 9, 10 ft.
½ in. Recessed Edge	48 in.	8, 9, 10 ft.



Showing the Front and Aluminum Foil-Covered Back of the Gold Bond Aluminum Foil Insulation Lath and Wallboard

GOLD BOND ROCK WOOL INSULATION

A Complete Line of Rock Wool Products for Home Insulation . . . Five Styles Including Batts in 2-inch and Wall Thickness, Loose and Granulated Wool . . . Fireproof, Moisture-Resistant

GOLD BOND Rock Wool embodies all the requisites of ideal insulation for homes. In addition to its effectiveness as an insulator, it is fireproof, lightweight, verminproof, moisture resistant and absolutely permanent.

Made of selected limestone which is reduced to a molten state under terrific heat and blown into long, silky fibres by steam. The fibres are then interlaced by special process to give the material strength and resiliency and to provide millions of tiny dead air insulating pockets. When the finished product is examined, it is hard to believe that this downy blanket of insulation was once limestone.

Provides Year 'Round Insulation

Gold Bond Rock Wool is recommended for the exterior walls and under the attic floor or between the roof rafters. This builds a blanket of insulation around the house that prevents furnace heat from escaping and makes it easy to keep the entire house at an even temperature. Savings in fuel run as high as 40%.

In summer, this barrier of insulation is equally effective in keeping out the warm heat of the sun. Step into the attic of a non-insulated house on a hot, sultry day and it's like walking into an oven. Much of this heat finds its way to the sleeping rooms on the second floor with the result that they are unbearably warm and stuffy. Gold Bond Rock Wool prevents this heat from seeping through and the entire house is kept from 10 to 15° cooler.

New Fibre-Skin Liner on All Standard Rock Wool Batts

All Gold Bond Rock Wool Batts, with the exception of the Handi-Batts, are cemented to a tough, waterproofed Fibre-Skin Liner as pictured at right. Provides effective wind-stoppage plus additional protection against dampness. A flange or overlap of 1½ inches on the sides serves as a handy nailing surface and speeds installation.

Types and Thicknesses

STANDARD BATTS (With Fibre-Skin Liner)

15″ x 24″ x Wall Thickness	For studs 16″ on centers
15″ x 48″ x Wall Thickness	For studs 16″ on centers
23″ x 15″ x Wall Thickness	For studs 24″ on centers
15″ x 24″ x 2″ Thick	For studs 16″ on centers
15″ x 48″ x 2″ Thick	For studs 16″ on centers
23″ x 15″ x 2″ Thick	For studs 24″ on centers

Important—23 x 15's should be used with studs spaced 24 inches on centers as the nailing flange is on the 15 inch sides.

HANDI-BATTS (Without Fibre-Skin Liner)

8″ x 15″ x Wall Thickness	For studs 16″ or 24″ centers

BAG GOODS

Loose Gold Bond Rock Wool	35 lb. bags
Granulated Gold Bond Rock Wool	35 lb. bags

Wall Thickness Batts fit snugly between studs and joists, building a blanket of insulation around the house. Note, the 1½″ nailing flange for easy application.

Color, Conductivity and Density

All Gold Bond Rock Wool Products are white in color. Thermal conductivity is .254 B.t.u. per hour, per square foot, per inch thickness, per degree Fahrenheit temperature difference. When installed in the recommended wall thickness, it is eight to ten times more effective as an insulator than fibre insulation board of the usual ½ inch thickness.

Gold Bond Rock Wool is unusually dense, the weight running from 5 to 6 lbs. per cubic foot. This extra density means more fibres and accordingly, more voids or insulating air pockets. (The highest insulating efficiency of mineral fibre insulation is approximately 5 lbs. per cubic foot.)

Fireproof, Water-resistant, Sanitary

Gold Bond Rock Wool is absolutely fireproof—as fireproof as the limestone from which it is made . . . Effectively protected from dampness by a new process of actually coating the fibres with water-proofing material. Additional protection against moisture is provided by the water-proofed Fibre-Skin Liner . . . An all-mineral product Gold Bond Rock Wool is vermin-proof and contains nothing to attract rodents of any kind. Rats will not nest in it.

Gold Bond is absolutely fire-proof. Withstands the piercing flame of a blow-torch with no ill effects except a slight dis-coloration.

Permanent . . . Will Not Settle

Gold Bond Rock Wool will not decompose, corrode or deteriorate in any way. Is absolutely permanent and will outlast the building in which it is used. Tests have been made of Rock Wool installations made forty years ago and the material was always found to be in perfect condition and providing the same efficient insulation as when first used. Is resilient and will not settle with age or from vibration.

Loose Rock Wool and Granulated Rock Wool

Loose Rock Wool is soft and fluffy and easily installed by hand to the desired thickness . . . Granulated Rock Wool is simply poured from the bag. Both products are moisture-proofed.

Specifications

Scope—Gold Bond Rock Wool Insulation shall be installed between studs of exterior walls and between joists under attic flooring (or between roof rafters).

Materials—Insulation shall be Gold Bond Rock Wool Insulation (specify type and thickness) of National Gypsum Company, Buffalo, N. Y., and delivered to job in the original containers.

Gold Bond Rock Wool Handi-Batts

Supplied in one size 8" x 15" x Wall Thickness, packed 24 in carton. A high quality, inexpensive type of moisture-proofed batt without the Fibre-Skin Liner. Easy to handle . . . quickly installed . . . fits snugly between studs and joists.

GOLD BOND PRODUCTS ARE MANUFACTURED IN MODERNLY EQUIPPED PLANTS

They Are Under Constant Supervision from the Time the Raw Materials Are Taken from the Mines Until the Finished Products Are Loaded in the Cars

Lime Mine at York, Pa. This limestone is exceptionally high in calcium oxide content.

Loading methods approved by the carrier insure contents reaching customers in perfect condition.

Clarence Center Plant Located in the Heart of Western New York's Rich Gypsum Deposit

THE Gold Bond HANDBOOK

ON RELATED PRODUCTS FOR WALLS & CEILINGS

1938

NATIONAL GYPSUM CO.—GENERAL OFFICES, BUFFALO, NEW YORK

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THE RED BOOK

1938 EDITION

UNITED STATES GYPSUM COMPANY

UNITED STATES GYPSUM COMPANY

GENERAL OFFICES

300 WEST ADAMS STREET, CHICAGO, ILL.

SALES OFFICES

Atlanta, Ga. .....1440 Citizens and Southern Bank Building
Baltimore, Md. .....Standard Oil Building
Birmingham, Ala. .....1203 Comer Building
Boston, Mass. ....731 Statler Office Building, 20 Providence St.
Buffalo, N. Y. .....514 Brisbane Building
Cincinnati, Ohio .....3012 Carew Tower
Cleveland, Ohio .....627-629 Hanna Building
Dallas, Tex. .....1301 Santa Fe Building
Denver, Colo. .....Continental Oil Building
Detroit, Mich. .....(At Mill) River Rouge, Mich.
Houston, Tex. .....4616 Main Street
Indianapolis, Ind. .....815 Architects' and Builders' Bldg.
Kansas City, Mo. .....438 Ward Parkway
Los Angeles, Calif. ....507 Architects Bldg., 5th St. at Figueroa
Milwaukee, Wis. .....(At Mill) 439 W. Oregon St.
Minneapolis, Minn. .....1308 Foshay Tower
New York City, N. Y. .....30 Rockefeller Plaza
Omaha, Neb. .....312 Woodmen of the World Building
Philadelphia, Pa. .....1616 Walnut St.
Pittsburgh, Pa. .....712 Grant Building
Portland, Ore. .....706 Spalding Building
St. Louis, Mo. .....806 Louderman Building
San Francisco, Calif. .....2501 Harrison St.
Washington, D. C. .....Investment Bldg., 15th and K St., N. W.

Samson Plaster Board Company, Sales Agents for United States Gypsum Company, Crosby Building, Buffalo, N. Y.

MILLS, MINES, QUARRIES AND DEALER SERVICE WAREHOUSES

Alabaster, Mich.
Boston, Mass.
Bronx, New York City
Buffalo, N. Y.
Chicago, Ill.
Cleveland, Ohio
Cordova, Ill.
Detroit, Mich.
East Chicago, Ind.
Eldorado, Okla.
Evans, Wash.
Falls Village, Conn.
Farnams, Mass.
Fort Dodge, Iowa
Genoa, Ohio
Grand Rapids, Mich.
Greenville, Miss.
Gypsum, Ohio
Harrison, N. J.
Heath, Mont.
Jersey City, N. J.
Kansas City, Mo.
Lancaster, Ohio
Laramie, Wyo.
Lisbon Falls, Me.
Los Angeles, Calif.
Loveland, Colo.
Miami, Fla.
Midland, Calif.
Milwaukee, Wis.
New Braunfels, Tex.
New Brighton, S. I., N. Y.
North Kansas City, Mo.
North Tonawanda, N. Y.
Oakfield, N. Y.
Oakmont, Pa.
Philadelphia, Pa.
Piedmont, S. D.
Plasterco, Va.
Quincy, Ill.
St. Joseph, Mo.
St. Paul, Minn.
San Francisco, Calif.
Skaneateles Falls, N. Y.
Southard, Okla.
South Bend, Ind.
Southgate, Calif.
Sweetwater, Tex.
Warren, Ohio

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UNITED STATES GYPSUM COMPANY

GENERAL COMMODITIES

Plasters • Plastering Bases • Plastering Systems
Wallboards

• • •

EXPERIENCE—The United States Gypsum Company is a pioneer in the gypsum industry in America. For more than thirty-five (35) years, the company—through its laboratories, experimental departments and field investigations—has closely studied the requirements of the building industry. Its formulae and mechanical equipment have been painstakingly designed to adapt each of its gypsum and other products to meet comprehensively these requirements.

USG Trade-Mark

exceptional national distribution facilities and a product specially manufactured to fulfill variable local climatic conditions.

The list opposite shows the location of the USG centers and visualizes these important service facilities.

SALES AND SERVICE FACILITIES—The twenty-five sales offices in the important building centers guarantee adequate service to architects.

COMPLETE DIVERSIFIED LINE OF PRODUCTS—Wherever gypsum is adapted to building uses there is a USG* product specially designed to fulfill the particular requirement.

The broad scope of the company's gypsum and other products is indicated by the Products Index.

MANUFACTURING AND DISTRIBUTING FACILITIES—The superiority of USG products is based upon high grade raw material, perfected processes of manufacture and one control of the gypsum products from mining to shipping.

The forty-nine mines, mills, and warehouses, strategically located throughout the United States, assure

THE TRADE-MARK—Products bearing the trade-mark of the United States Gypsum Company are safeguarded against imperfections. They are rigidly inspected by experts at every stage of production, from the selection of the raw materials to the shipment of the finished products.

Any variation from the highest USG Standard means rejection.

This rigid maintenance of quality over a long period of years has established the name and trademark of the United States Gypsum Company as synonymous with the highest standard of excellence in building materials.

GYPSUM • TECHNICAL DATA

GYPSUM—Chemically, Gypsum is hydrous calcium sulphate $CaSO_4.2H_2O$. It is a widely distributed mineral found in rock formation. The rock gypsum is crushed, ground and then calcined, which drives off a part of the molecular water, forming the hemi-hydrate or plaster of paris. This product, when mixed with water, recrystallizes or sets.

FIREPROOF—The superior qualities of gypsum as a fireproof building material have been definitely established by numerous tests made by the Underwriters' Laboratories, Inc., The Bureau of Standards, Columbia University, and by the bureau of buildings in many of the larger cities. (Authentic test data if desired will be furnished on request.)

The temperature of the unexposed side of the gypsum slab cannot exceed 212° F. while there is any water of crystallization in the gypsum. This is due to the fact that the water of crystallization in the gypsum must be vaporized during the application of fire to it, and as the gypsum slowly calcines, the cellular structure fills with steam. It is this barrier of calcined material which stubbornly resists the progress of the fire.

*Registered Trade-Mark

PLASTERS

• • •

GYPSUM PLASTERS • GENERAL DATA

GENERAL FEATURES

DESCRIPTION—Gypsum Plasters are made by driving off water of crystallization from gypsum rock through calcination, or heat treatment. The addition of water to this basic material (calcined gypsum rock) forms a plastic mass which unites with the same amount of water as was driven off during calcination. When this plaster is mixed with water it re-crystallizes or sets.

QUICK-SET—FAST DRYING—Gypsum Plaster sets up uniformly hard and homogeneous within two to six hours after application. Inside of thirty-six hours, under proper drying conditions, the plaster dries and there is no further dampness or sweating.

ADVANTAGES

ADAPTABILITY—Gypsum Plaster adheres satisfactorily to gypsum, wood or metal lath; gypsum or clay tile; brick or other approved plastering surface.

FIRE RETARDING—Made of gypsum, it is fireproof.

EXCEPTIONAL ADHESIVENESS—Its exceptional adhesiveness greatly increases structural durability.

DOES NOT EXPAND OR CONTRACT—It does not expand and tear itself loose from the surface to which it is applied, even when subjected to fire. It will not crack of itself, shrink or stain.

DURABLE—Gypsum Plaster will withstand the wear and tear of occupancy during the life of the building. It affords a substantial foundation for the finish coat and applied decoration.

SAVES TIME—It sets in two to six hours and dries within 36 hours—interior trim and finish may thus, reasonably soon, follow the plastering without danger from moisture.

PLASTICITY, RICHNESS and "SLIP"—USG Plasters have been developed as much for the convenience of the plasterer as for the above qualities. The result is an unusual richness and "slip" which is appreciated by the competent mechanic. They mix easily at the mortar box; they go on quickly and spread far, resulting in maximum coverage with minimum labor.

UNIFORMITY

The quality of USG Plasters is rigidly controlled by repeated chemical tests, physical tests, and by effective inspection in every stage of manufacture, from the crude gypsum rock to the finished product. Samples from every shipment are retained for future reference.

All USG Plaster meets the standard specification for Gypsum Plaster of the American Society for Testing Materials.

The "Red Top Process" assures the maximum in economy, easy workability and bulk.

IDENTIFICATION • RED TOP* BAG

In addition to the USG trademark on each bag of plaster, the United States Gypsum Company's Plasters are contained in the standard Red Top bag, which provides a positive means of identification that discourages substitution.

The red top is assurance that the material in the bag has been made and tested according to most rigid specifications.

PLASTER PACKAGE

GENERAL—Every package of USG Gypsum Plaster bears the familiar trade-mark (see page 1), and bags have the Red Top. Each bag bears the brand and the mixing directions.

REINFORCED PAPER BAG—The paper bag, made of layers of strong kraft paper, is the standard bag of the United States Gypsum Company.

This bag gives adequate protection, keeping the plaster dry in the warehouse, and a sudden shower while the material is in transit or unprotected at the job will do little if any damage. It is light in weight, easily handled and stored. The dealer and contractor have no investment tied up in bags which are to be returned for credit; nor do they lose the value of sacks stolen from the job or damaged.

In view of these advantages in addition to their convenience, we recommend the paper bag as the most satisfactory plaster package both from an economic as well as a practical view-point.

*Registered Trade-Mark

COVERING CAPACITY

The covering capacity of USG Plasters is as great for each type of material as it is possible to obtain.

Covering capacity necessarily depends upon conditions under which the plaster is applied—upon the mechanic, thickness of grounds, kind and trueness of the surface to be plastered, spacing or voids of lath, quality of sand, etc.

The covering capacity given hereinafter with each type of material and for the various surfaces to receive the plaster is based on average conditions, and may thus be accepted as a safe basis for calculating the quantity of each class of material that is required when the material is applied according to the Master Specifications given on pages 26 to 34 inclusive.

BRANDS

The standardization nationally of USG plasters under the "Red Top" brand is a protection to the architect and a convenience to the trade.

The architect is assured that the quality of the plaster, from whatever mill shipped, will be identical.

When specifying "Red Top" for use in a distant city, the architect is assured (1) that the plaster will be the same as that with which he is familiar; (2) that a shipping mill is in close proximity; (3) that the plaster will be recognized as standard by the local mechanics.

A NEW STANDARD of JOB PERFORMANCE for RED TOP CEMENT PLASTER

Cement Plaster is the most important plaster material used by the architect. This is true both from the standpoint of quantity used and dependability of results in the finished job. It is the foundation of most plastering work.

Therefore, it is important to every architect that he be acquainted with the significance of what Red Top Cement Plaster now does to overcome job difficulties. It almost entirely eliminates difficulties of setting time, the cause of the greatest percentage of plaster complaints. It is far less sensitive to job abuses that affect setting time. This is important to the architect not as an opportunity to relax supervision but as an assurance of greater dependability and greater uniformity in the finished job when applied by the average mechanic.

With varying amounts of sand (as specified for different bases) with varying fineness of sand and even against water that would normally accelerate the set of the plaster, Red Top Cement Plaster maintains a very uniform setting time. This is brought out in the listing of qualities at the bottom of this page. This quality of uniform setting time under varying job conditions coupled with the better working qualities and keeping qualities of Red Top Cement Plaster assures satisfactory plaster jobs.

Additional literature will be sent to any architect who is interested in further details about this unique quality of Red Top Plaster.

RED TOP CEMENT PLASTER

1. Is of improved plasticity, remains plastic and workable for a longer time after mixing, and sets uniformly and quickly over the entire walls and ceilings.
2. Sets in regular time even with dirty water that ordinarily would affect the set of plaster.
3. Sets in regular time despite sand impurities that would accelerate or retard the set of ordinary plaster.
4. Sets in regular time whether machine-mixed or hand-mixed.
5. Sets in regular time over the following bases: metal, wood, gypsum or insulating lath, clay or gypsum tile.
6. Sets in regular time, and sets in the same time when sanded for use either as brown or scratch coat.
7. Sets irrespective of climatic conditions, and does not dry out before setting.
8. Sets with more uniform surface hardness than ordinary plasters, thus providing for better application of white coat.
9. Sets from the base out to the surface, instead of from the surface in to the base, and takes its set evenly.
10. In Storage Red Top Wall Plaster retains its plasticity and working properties for at least one year.

Manufactured under U. S. Patents 1,683,539 and 1,989,641

CEMENT PLASTERS (Fibered and Unfibered)

USE—Use for scratch and brown coats.

BRANDS—Note—*See "Brands," page 3.*

Red Top*	Niagara	King's Windsor*
Granite	Peerless	Red Top Eldorado* (Gypsite)
Big-4*	Hardwall	

Note—*Gypsite plasters, popularly known as "dark plasters," are well adapted to the climatic and building conditions of the Southwest.*

DESCRIPTION—Red Top Cement Plasters are "neat" materials—sand to be added at the job. They are unusually rich, spread well, and, when mixed properly with a good grade of sand, are uniformly satisfactory in ultimate results in the finished wall.

Manufacture under the "Red Top Process" assures the maximum in sand carrying capacity, easy workability, and bulk. They set in a uniform time over any base unaffected by ordinary job conditions.

DIRECTIONS— ***(See Master Specifications, pp. 30, 31).***

Mixing—**(a)** For scratch coat on gypsum, fiber insulating, wood and metal lath, mix 2 parts by weight of dry sand with 1 part of plaster.

(b) For scratch coat on brick, gypsum and clay tile and for second (brown) coat over these bases as well as the bases in (a), mix 3 parts by weight of dry sand with 1 part of plaster.

Note—*Figure 3 ten-quart buckets of sand weigh 100 lbs.*

Application—(a) On Wood Lath—Soak lath. Apply in 2 coats. Apply scratch coat with sufficient pressure to obtain a good key. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(b) On Gypsum Lath and Fiber Insulating Lath—Do not wet lath. Apply in 2 coats. Scratch coat shall be well scratched in to fill interstices between lath units. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(c) On Metal Lath—Apply in 2 coats. Apply scratch coat lightly, covering lath and filling meshes. Scratch first coat and allow to set before applying brown coat. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(d) On Brick and Gypsum or Clay Tile—Soak brick or clay tile walls. Sprinkle gypsum tile lightly. Apply in 2 coats. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

Note—*For best results over all bases, let scratch coat set before applying brown coat.*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Note—*See "Covering Capacity," page 3.*

Basis—Under average conditions Gypsum Cement Plaster mixed and applied in accordance with standard specifications will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	180–210 (Sanded 2 to 1)	105–135 (Sanded 2 to 1)	225–240 (Sanded 2 to 1)	165–200 (Sanded 3 to 1)	235–255 (Sanded 3 to 1)

WOOD FIBER PLASTERS

USE—Use for scratch and brown coats.

BRANDS—Note—*See "Brands," page 3.*

Red Top.
Red Top Eldorado (Gypsite).

Note—*Gypsite plasters, popularly known as "dark plasters," are well adapted to the climatic and building conditions of the Southwest.*

DESCRIPTION—Wood Fiber Plasters are shipped ready to use, requiring only the addition of water. The base is Gypsum Plaster, to which is added finely shredded wood fiber, uniformly distributed. Made of pure gypsum reinforced with wood fiber, it is extremely tough, strong, dense, and durable. It is superior to sanded plaster in fire-resistance, insulation, and sound-deadening. Its great flexibility adapts it to withstand vibrations and strains.

Wood fiber plaster avoids the handling of sand, dangers of poor sand, and oversanding. It is smooth, fatty, and spreads easily. When applied, it weighs about two-thirds as much as sanded cement plaster.

It is especially adaptable to alterations and is desirable for winter use. It may be sawed like wood.

DIRECTIONS—***(See Master Specifications, pp. 30, 31).***

Mixing—Use neat for scratch coat on gypsum fiber insulating, metal and wood lath. For second or brown coat over above bases and for all plastering on brick and gypsum or clay tile, use either neat or with not more than 1 part of sand to 1 part of plaster by weight.

Hoe plaster (or plaster and sand) into the water and allow to soak at least ten minutes; then mix to proper consistency.

Application—(a) On Wood Lath—Soak lath. Apply in 2 coats. Apply scratch coat with sufficient pressure to obtain a good key and scratch the surface. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(b) On Gypsum Lath and Fiber Insulating Lath—Do not wet lath. Apply in 2 coats. Scratch coat shall be well scratched in to fill interstices between lath units. Scratch first coat and allow to set before applying brown coat. Before brown coat begins to set,

*Registered Trade-Mark

broom or cross-rake surface ready to receive the finish coat.

(c) On Metal Lath—Apply in 2 coats. Scratch coat shall be applied a little stiff, covering lath and filling meshes. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(d) On Brick and Gypsum or Clay Tile—Soak brick or clay tile walls. Sprinkle gypsum tile lightly. Apply in 2 coats. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

Note—*For best results, let scratch coat set before applying brown coat.*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Note—*See "Covering Capacity," page 3.*

Basis—Under average conditions this plaster mixed and applied as specified will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath
Sq. yds. per ton	90–100 (Unsanded —water only added)	55–65 (Unsanded —water only added)	115–120 (Unsanded —water only added)

PREPARED PLASTERS (SANDED)

USE—Use for scratch and brown coats.

BRANDS—Note—*See "Brands," page 3.*

Red Top* Sanded Plaster.
Red Top Sanded Plaster for Brick or Tile.
Red Top Sanded Wood Fiber Plaster.

DESCRIPTION—Prepared Plasters are shipped ready to use, requiring only the addition of water. The base is Gypsum Plaster to which is added nothing but sharp, clean plastering sand, thoroughly graded and screened.

Correct proportions and mixing are accomplished by automatic machines at the factory.

Prepared plasters are desirable in localities where good sand is difficult to obtain.

Since they are ready to apply with the addition of water only, they are particularly well adapted for use in winter when unfrozen sand of good quality is difficult or expensive to obtain.

Since these plasters may be readily mixed inside the building, they are useful for repair and remodeling work in all seasons.

DIRECTIONS—***(See Master Specifications, pp. 30, 31).***

Mixing—Add only water. Hoe plaster into water. Allow to soak 10 minutes. Mix thoroughly and bring to proper consistency.

Application—Apply as specified for Cement Plasters.

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Note—*See "Covering Capacity," page 3.*

Basis—Under average conditions Gypsum Prepared Plaster mixed and applied in accordance with standard specifications will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	60 to 70	35 to 45	75 to 80	45 to 55	65 to 70
	(Plaster mixed with water only—no sand added)				

BONDCRETE* • FOR INTERIOR CONCRETE SURFACES

USE—Use for scratch and brown coats over concrete.

DESCRIPTION—Ordinary gypsum or lime plaster does not adhere properly to concrete—consequently Bondcrete, a specially made plaster for concrete surfaces, is recommended.

Bondcrete permits moisture, expelled from concrete for approximately a year, to be carried through and evaporated on the surface, thus avoiding a condition approaching a sweat-out. Any plaster finish can be used over Bondcrete. Oil paint decoration should be deferred for a year.

Bondcrete adheres strongly to dry concrete due to its cementatious qualities and its practically unchanging volume during setting and hardening. It needs only water to make it ready for use.

Do not apply Bondcrete over a smooth, oily or efflorescent surface. Provide a semi-rough, clean surface. It should not be covered with a sanded brown coat on ceilings.

Finish coat must never exceed ¼ inch in thickness. Provide furring and lathing where more than ¾ inch of plaster is required or ornamental plaster is suspended.

DIRECTIONS—***(See Master Specifications, p. 31).***

Mixing—Add only water. Hoe plaster into water. Allow to soak 10 minutes. Mix thoroughly and break down to a smooth, even creamy consistency. Do not mix more material than can be used in one hour.

Application—Apply in two (2) coats in just sufficient thickness to obtain an even surface not to exceed ⅜ inch on ceilings and ⅝ inch on side walls. Before the plaster begins to set, broom the surface to receive the finish coat.

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—From 90 to 120 sq. yds. to the ton depending upon regularity of concrete surface and thickness applied.

Note—*See "Covering Capacity," page 3.*

*Registered Trade-Mark

PREPARED GYPSUM FINISHES

USE—Use for finish coat only.

BRANDS—Note—*See "Brands," Page 3.*

Trowel Finishes
Red Top* Trowel Finish.
Red Top Universal* White Trowel Finish.
Red Top Adamant* White Trowel Finish.
Red Top Adamant Slate Colored Trowel Finish.
Red Top Adamant IXXX Trowel Finish.
Red Top Badger* Gray Trowel Finish.

Sand Float Finishes
Red Top* Silica White Sand Float Finish.
Red Top Adamant Gray Sand Float Finish.
Red Top Adamant White Sand Float Finish.
Red Top Sand Float Finish (Light Gray).

DESCRIPTION—Prepared Gypsum Finishes require only the addition of water to make them ready for use.

Made of gypsum, they form a perfect and natural bond with any gypsum plaster base coat.

The sand float finishes contain selected sharp, clean silica sand, properly graded, screened and thoroughly dried, thus assuring a uniform mix of correct proportion. They are especially recommended for use in winter when unfrozen sand of the requisite quality is difficult to obtain. Decorations may safely be applied as soon as the finish dries out.

DIRECTIONS—***(See Master Specifications, pp. 32, 33).***

Mixing—Hoe plaster into water. Use approximately 1 part of water to 2 parts of plaster measured by volume. Allow to soak for at least 10 minutes. Mix thoroughly to break down to a smooth, even consistency. Add water, if necessary, to bring to creamy consistency.

Application—(a) Trowel Finish—Apply in 3 coats over a dry and roughened gypsum plaster base—sprinkle lightly with water if suction is too great. Apply a thin coat well ground into surface; allow to draw a few moments. The second time over, lay the material on level. The third time, use thin material and fill all imperfections; allow a few moments to draw; trowel to a smooth finish, applying water with a damp brush. Complete troweling before finish has set.

(b) Sand Float Finish—Apply over a gypsum plaster base which has set firm and hard but is still partly green (about 12 hours after application). Lay on with a trowel; then use a float working the material to a true, even surface, free from float marks. Use as little water as possible—use damp brush only. Complete floating before finish has set.

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Under average conditions Gypsum Trowel Finish, if mixed and applied in accordance with standard specifications, will cover about 350 to 400 yds. per ton; Gypsum Sand Float Finish about 250 to 275 yds. per ton.

ORIENTAL* INTERIOR • COLORED FINISH PLASTER

USE—Use for textured or floated plaster finish coat.

DESCRIPTION—Oriental Interior is a colored finish plaster. The material is made in thirteen standard shades and white. Tints are produced with mineral colors, great care being taken to assure absolute uniformity of shade. It is ready for use with the addition of water only.

With ordinary tools, attractive, tinted, float, textured tile and stone finishes may be obtained.

The positive regulation of color insures walls with the minimum amount of "joinings" and avoids the danger of inaccurate mixing.

DIRECTIONS—***(See Master Specifications, pp. 32, 33).***

Mixing—Hoe material into water, using approximately 1 part of water to 2 parts of plaster, by volume. Let soak overnight. Mix thoroughly to a smooth, creamy consistency. Transport in buckets.

Application—Apply over a gypsum plaster base which has set firm and hard. On masonry or tile, base must be thoroughly dry—on lathing base should be 75% dry. Wet down lightly if suction in base is too great. Use as little water as possible—use damp brush only. Provide proper drying conditions to assure uniform color.

(a) Float Finish—Apply in 2 coats. First apply a thin coat well ground into base. The second time over, lay the material on perfectly level and float to a true, even surface, free from float marks.

(b) Texture Finish—Apply in 2 coats. First apply a thin coat well ground into base and allow to draw a few moments. The second time over, lay the material on perfectly level, working it into the desired texture. Tile or masonry effects are obtained by marking while material is green (within 4 to 5 hours).

ORIENTAL GLAZE—Oriental Glaze is a colored glaze for use over textured surfaces. It produces two-tone effects, drying with a soft sheen and a finish that can be washed with a light soap solution. It may be applied directly to Oriental Interior as soon as it is dry. Shipped in 5-gal., 1-gal., quart, and similar cans down to $\frac{1}{16}$th gallon.

PACKAGE—Shipped in 100-lb. paper bags. Order Oriental Interior by color name designated on color cards or samples.

COVERING CAPACITY—Approximately 250 to 300 sq. yds. per ton, varying according to textures.

*Registered Trade-Mark

GAUGING PLASTERS

USE—Use for finish coat only in conjunction with lime putty described below.

BRANDS—Note—*See "Brands," page 3.*

Slow Set—Red Top* (Gray).
Red Top Star* (White).
Red Top Superfine Finishing (White).

Quick Set—Red Top* (Gray).
Red Top Champion* (White).
Red Top Kings Diamond* (White).
Red Top NYC Mills*.
Red Top Quick Setting.
Red Top Fast Setting.

DESCRIPTION—These plasters are made of raw materials carefully selected from gypsum deposits unusually well suited for plasters for this purpose.

Aside from saving time, gauging plasters are far more satisfactory than screened cement plaster.

They are made in both "slow set" and "quick set," and are uniformly ground to just the right fineness to insure easy working and mixing qualities.

Gauging plasters used according to directions contribute early hardness and freedom from shrinkage cracks.

DIRECTIONS—Full directions for mixing and application are given under Finishing Lime.

PACKAGE—Shipped in 100-lb. paper bags. Also shipped in 250-lb. (230 lb. net) barrels and 320-lb. (300 lb. net) barrels.

COVERING CAPACITY—Under average conditions one ton of Gauging Plaster, mixed with two tons of dry hydrated lime by weight, will cover about 1000 to 1400 sq. yds.

FINISHING LIME

USE—Use finishing lime for finish coat only in conjunction with Gauging Plaster or Keene's Cement.

BRANDS—Note—*See "Brands," page 3.*

Hydrated Finishing Lime
Red Top Ivory*.
Red Top Grand Prize*.
Red Top.
Cheshire* Hydrate (High Calcium).
Plastimax* Finishing Hydrate (High Calcium).

Finishing Quicklime
Cheshire* Quicklime (High Calcium)—in Lump, Pulverized and Superfine.
Peerless Quicklime (High Calcium)—in Lump and Pulverized.

DESCRIPTION—These limes are specially prepared for finishing purposes. They possess a rich plasticity that makes them spread easy and far; hence they save time and labor.

Hydrated lime saves the time and trouble of slaking and screening lime on the job.

The Red Top Hydrated brands are made from the famous Ohio dolomite which, with USG standards of manufacture, produce a lime unexcelled for finishing purposes.

They are of a snowy white color and are absolutely free from "pops" and "pits." They meet the standard specifications for hydrated lime of the American Society for Testing Materials and are accepted for United States Government construction without specific tests on the certification of the United States Gypsum Co. that the lime conforms with government requirements.

Plastimax lime is a specially processed quick-soaking hydrate.

Cheshire Quicklime is wood burned and of exceptional quality. Because of the exceeding purity and the physical characteristics of the stone, this lime is unusually quick slaking. It has a high putty yield.

DIRECTIONS—***(See Master Specifications, pp. 32, 34).***

Mixing—(a1) Hydrated Lime—Fill watertight box one-half to two-thirds full of clean water. Add dry lime gradually sifting through a ¼-in. mesh screen until water is dried up Allow to soak undisturbed for at least 12 hours. Protect from frost, evaporation, and dust while soaking.

(a2) Quicklime—Add water and lime gradually while mixing, constantly agitating mixture to prevent burning of unslaked portion. Mix to a thin consistency and screen. Run into ageing box.

(b) Use at least 1 part dry gauging plaster by weight to 2 parts dry lime hydrate. To obtain this proportion, mix as follows:

For each 12-quart bucket (approximately 37 lb.) of lime putty, add 2 quarts of water in the ring on the board. Sift in enough gauging plaster to absorb the water; then blend plaster and lime putty together thoroughly.

(The above proportions may also be obtained by mixing 1 part **by measure** of dry gauging plaster with 3 parts of lime putty.)

Application—Apply in 2 coats over a fairly dry gypsum plaster base. Scratch in a thin coat well ground into base; then apply second coat filling imperfections. Trowel to a smooth finish, applying water with a damp brush. Complete troweling before finish has set.

PACKAGE—Hydrated Lime is shipped in 50-lb. paper bags. (Plastimax in 40-lb. bags.)

Quicklime is shipped in 180-lb. and 280.-lb. net weight wood barrels and steel drums, also in bulk. The Cheshire Finish Quicklime is shipped also in 80-lb. and the Peerless Quicklime in 50 and 100-lb. Multi-Wall paper moisture-proof bags.

COVERING CAPACITY—Under average conditions one ton of Red Top Hydrated Lime, when used with the proper proportions of gauging plaster, should finish from 500 to 700 sq. yds.

A ton of Quicklime, when used with gauging plaster, should finish about 1000 yards.

*Trade-Mark

RED TOP* KEENE'S CEMENT

USE—Use for high grade plasterwork, particularly to receive fine decorative treatment and where the utmost in hardness, density and sanitation is desired.

DESCRIPTION—Red Top Keene's Cement is the hardest and densest gypsum material that is applied with a trowel. It is made from selected gypsum mined at Southard, Oklahoma. It excels in smooth, uniform working qualities and in tensile strength, due to the selected material and the USG improved methods of manufacture and rigid mill inspection.

Keene's Cement is ground to extreme fineness, is pure white in color and takes a very high, glass-like polish. It is impenetrable to rodents and vermin. It is easily cleaned. It contains no alkali to stain delicate wall tints or saponify the oil in paints, hence it is an ideal base for fine decorating.

Beside the standard Keene's Cement, Red Top Keene's Cement is made in three special types: Red Top Casting Keene's; Red Top Scagliola Keene's and Red Top Quick Troweling Keene's.

Red Top Casting Keene's, especially adapted to high class ornamental work, has minimum expansion. It is white, non-staining, non-corrosive, non-acid. It has a final set within two hours.

Red Top Scagliola Keene's is made expressly for the purpose. Initial set is 3 to 6 hours; final set, 15 to 20 hours.

Quick Troweling Keene's is always used with lime putty for finish plaster. Its rapid set permits application and finish troweling in one operation. Setting time is within two hours, when final troweling should be given.

DIRECTIONS—***(See Master Specifications, pp. 32, 33).***

Mixing for Trowel Finish—For extra hard finish, use Standard Keene's neat; for hard finish, use 25 lb. lime putty to 100 lb. Standard Keene's; for medium hard finish, use 80 lb. lime putty to 100 lb. Standard Keene's.

Use Quick Troweling Keene's with not more than 60 lb. lime putty to 100 lb. Keene's. Place 2 ten-quart pails of lime putty in a ring on the board; add 4½ to 5 gallons of water; sift in 100 lb. Quick Troweling Keene's; allow to soak 15 minutes; blend plaster and putty together thoroughly.

To assist in application over an extremely dry base, fine marble or white silica sand may be added in the proportion of 20 lb. to 100 lb. Keene's Cement.

Note—*Figure 6 quarts sand weigh 20 lb.*

Application for Trowel Finish—Apply in 2 coats over a dry gypsum plaster base. Scratch in a thin coat well ground into the base; then apply a second coat filling imperfections. Trowel to a smooth finish, applying water with a damp brush. Complete troweling before finish has set.

Mixing for Sand Finish—Mix well soaked lime putty, clean sand, and Standard Keene's Cement in following proportions:

100 lb. lime putty, 400 lb. sand, 100 lb. Keene's. If color is desired, use USG Limeproof Colors.

Application for Sand Finish—Apply in 2 coats over a fairly dry gypsum plaster base, scratching in a thin coat and doubling back with the second coat. Finish to desired texture, using water sparingly.

Casting—Use no lime. Mix **Casting** Keene's to a pouring consistency and cast in shellac-coated moulds of plaster or wood or in other non-porous moulds. Setting time is 2 hours. Color may be added if desired.

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Under average conditions one ton of Keene's Cement, when used neat and in accordance with specifications, will cover about 400 to 500 sq. yds.

RED TOP (ARIDIZE*) MOULDING PLASTER

USE—Use for ornamental moulded plaster work.

BRANDS—**Note**—*See also "Brands," page 3.*

Red Top* (local moulding).
Red Top No. 1 (White).
Red Top No. 2 (White).
Red Top King's Diamond (White).
Golden Seal (White).

DESCRIPTION—The requirements for moulding plaster are distinctly different from any other class of plaster.

Gypsum deposits suitable for making material of this particular type are exceedingly rare.

Aridize Moulding Plasters are made from selected gypsum ideal for the purpose and unequaled for whiteness and purity. This, together with the special patented process of manufacture, produces a particularly smooth working plaster of absolutely uniform setting quality.

These plasters are ground much finer than other similar products, assuring a more thorough solution and a finer surface to the finished work. The fine satin-like surface increases the life of the moulds.

In addition to these qualities, the plasters are cooler working and slower setting, which accounts for low expansion and absence of warped moulds. The slow generation of heat in setting insures protection to gelatine or glue moulds. Slow setting gives time for blending and working out trapped air bubbles and working the plaster into angles and corners of moulds.

Even when green, moulds made of these plasters possess great strength, and breakage by handling and manipulation in the moulding and casting stage is diminished.

DIRECTIONS—***(See Master Specifications, p. 34).***

Add water only, mix thoroughly and bring to a working consistency. Add 50% lime putty to the moulding plaster where extra plasticity is required for run work.

PACKAGE—Shipped in 100-lb. paper bags; 250-lb. (230 lb. net weight) barrels and in 320-lb. (300 lb. net weight) barrels.

*Registered Trade-Mark

PLASTERING BASES

• • •

ROCKLATH • THE FIREPROOF LATH

Rigid Gypsum Board Lath Units

• • •

PERFORATED ROCKLATH* • FIREPROOF LATH

Qualified for One Hour Fire Rating

DESCRIPTION—In Perforated Rocklath the United States Gypsum Company offers the building industry an improved gypsum lath. This product is the result of over 20 years experience in the development and manufacture of fireproof gypsum laths.

In appearance this lath is like other bundled Rocklath except for the perforations which give it its distinctive qualities. These consist of perforations spaced at regular intervals throughout the surface of lath. These perforations provide "mechanical" keying of plaster in addition to the already superb bond of plaster to the surface of the lath.

The outstanding advantage of Perforated Rocklath is its added resistance to the progress of fire. It has all the advantages of Rocklath including maximum bond with plaster, economy, and non-combustibility. Its plus value is persistence of the bond between the lath and plaster for a longer time after having been attacked by fire.

ONE HOUR FIRE RATING—Tests run at the U. S. Bureau of Standards on a partition lathed in the approved manner with Perforated Rocklath and plastered with a full half inch of Gypsum Plaster demonstrated that this construction had sufficient fire resistance to stand up in a typical building fire test for one hour.

THOROUGHLY TESTED—Perforated Rocklath was first manufactured to meet special plastering requirements more than four years ago. It was introduced to the Pacific Coast Plastering Trade where many millions of feet of it are now in use and where it has had an opportunity over more than four years to prove its advantages.

MECHANICS PREFER IT—There are actual construction advantages from the mechanic's standpoint in Perforated Rocklath. The perforations spaced at regular intervals help the lather to measure the board with his eye, making it easier for him to measure off and score and to produce odd pieces of correct length to fit standard stud spacing. There is an even greater advantage for the plasterer. The perforations tend to slice the plaster off the trowel as it sweeps over them. In this way they produce an effect somewhat similar to that of an open mesh lath.

SIZES, WEIGHTS, ETC.—Perforated Rocklath is made ⅜ in. thick and in two sizes—16 x 32 in. and 16 x 48 in. The boards are packed in bundles for easy handling and stacking—6 sheets to the bundle. Each bundle of 32-in. boards contains 21⅓ sq. ft. and weighs about 30 lb.; each bundle of 48-in. boards contains 32 sq. ft. and weighs about 45 lb.

Either size provides the usual vertical joint break without cutting for framing members 16 inches o. c.

SPECIFICATIONS—See Master Specifications, pages 29 and 31 for application of Rocklath and plastering.

*Registered Trade-Mark

ROCKLATH

Rocklath is a solid sheet of gypsum, ⅜ in. thick, 16x32 in. and 16x48 in., encased in a tough fibrous covering, forming a uniform, strong, fireproof plaster base. The fibrous covering affords uniform suction, insuring a permanent, strong bond with gypsum plaster. Rocklath is easily and quickly nailed to wood studding, furring or joists. It saves plaster and protects the framework from the unnecessary absorption of moisture and the warping that may result from it. It does not stain plaster nor create lath marks.

Rocklath has the USG* patented rounded reinforced folded edge which gives maximum strength, protects the boards, and does not injure the hands.

SIZES, WEIGHTS, ETC.—Rocklath is made ⅜ in. thick and in two sizes—16x32 in. and 16x48 in. The boards are packed in bundles for easy handling and stacking—6 sheets to the bundle. Each bundle of 32 in. boards contains 21⅓ sq. ft. and weighs about 30 lbs.; each bundle of 48 in. boards contains 32 sq. ft. and weighs about 45 lbs.

Either size provides the usual vertical joint break without cutting for framing members 16 inches O. C.

SPECIFICATIONS—See Master Specifications, pages 29 and 31 for application of Rocklath and plastering.

INSULATING ROCKLATH

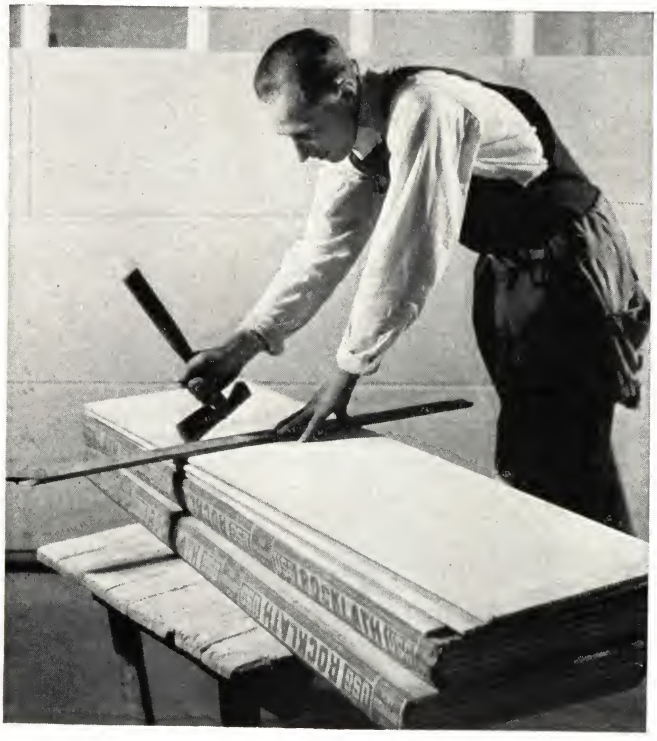
Insulating Rocklath is standard ⅜ in. Rocklath upon the back of which is mounted a thin, smooth, bright sheet of aluminum foil. Applied with the foil side next to framing members and facing a dead air space, its insulating value is equal to or better than that of a half-inch thick fiber insulating lath.

The insulating efficiency of Insulating Rocklath is based on these facts. Heat passing through the walls or roof of a frame building (from inside out or from outside in) must pass across the air space between the studs and rafters. Approximately seventy-five per cent of such heat travel is by radiation. Insulating Rocklath resists the passage of radiant heat. In summer it resists heat by reflecting it back as a mirror reflects light. In winter time, when the heat flow is outward, Insulating Rocklath insulates by reducing the flow of heat by radiation.

The efficiency of bright surfaces, such as that on the back of Insulating Rocklath, to reflect radiant heat, or to refuse to emit heat by radiation has been conclusively proved in laboratory tests.

SIZES, WEIGHTS, ETC.—Same as Bundled Rocklath.

SPECIFICATIONS—See Master Specifications, pages 29 and 31, for application of Rocklath and plastering.



*Registered Trade-Mark

ADVANTAGES OF ROCKLATH

FIREPROOF—Does not burn or readily transmit heat. It interposes a continuous fireproof sheet of substantial thickness over the wood frame, thus tending to confine the fire to the room in which it originates. Does not disintegrate or corrode.

NO EXPANSION OR CONTRACTION—Does not expand, warp or buckle when wet plaster is applied, consequently will not shrink when plaster dries out.

EXCEPTIONALLY STRONG PLASTER BOND—The strong fiber covering with its uniform suction prevents the plaster from "slipping" when applied. Gypsum plaster is easily applied and bonds more firmly to Rocklath than to other types of lath. Because there is no sap in Rocklath, there is no consequent discoloration.

In U. S. Bureau of Standards' Tests a pull of six pounds per square inch was required to separate the plaster from the gypsum lath, providing a factor of safety of 144.

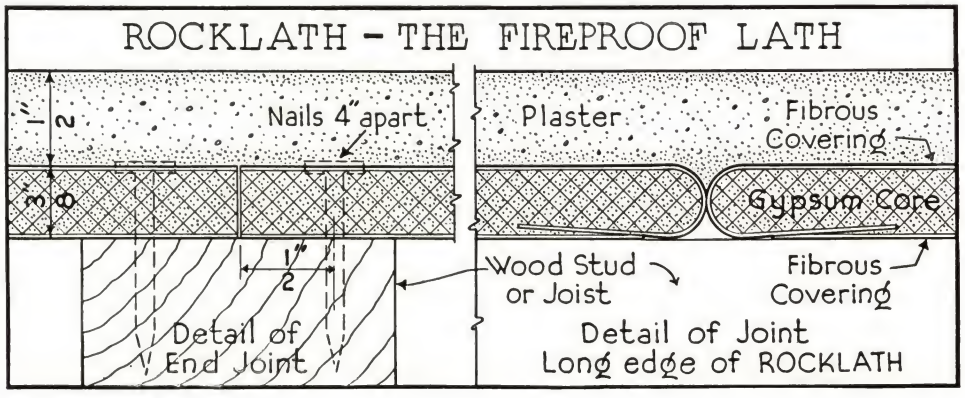
ECONOMY IN ERECTION—Compared with ordinary lath, Rocklath bundles are stacked and carried and the light weight units handled and erected quicker and with greater ease—there are no splinters. One piece of Rocklath equals 9 wood laths and requires 15 to 20 nails, depending on the size of the lath unit, instead of 27 or 36. One man will erect an average of from 125 to 150 sq. yds. a day compared with 100 to 115 sq. yds. with wood lath. It scores and cuts cleanly and easily without waste.

UNIFORM THICKNESS — Since no plaster is lost through droppings pushed through the lath and the ragged keying plaster behind the lath, the thickness is uniform throughout and approximately 20% less plaster is required.

ELIMINATES MOISTURE—Rocklath needs no wetting before plaster is applied. The continuous dry gypsum sheet, ⅜ in. thick, eliminates its proportionate part of the usual wet plaster moisture and at the same time seals off the applied plaster moisture from contact with the absorptive wood framing, preventing much of the usual swelling and subsequent shrinkage.

Since there is less moisture present, the plaster and building are dry and ready for the application of interior wood trim and decorating in the minimum time.

COMPARATIVE COST—The completed wall (Rocklath and plaster) costs less than metal lath and plaster, and about the same as wood lath and plaster.



WEATHERWOOD* INSULATING LATH

For complete data, see the USG Co.'s section on "Thermal Insulation."

Weatherwood Insulating Lath has an average low conductivity of .32 B.t.u.'s per hour, per sq. ft., per degree F., per inch thickness. It is made in 18x48-in. units, ½ and 1 in. thick. Longitudinal edges are shiplapped to insure insulation continuity. Edges also are beveled to assure strong plastering at the joints. The weight is but 730 lb. per 1000 sq. ft. of half-inch material.

Because of the light weight and large units, the lath is easy to install.

Authentic tests show that to rupture the bond between gypsum plaster and Weatherwood Insulating Lath requires over 1350 lb. per sq. ft., the rupture occurring in the board itself.

PYROBAR* PARTITION TILE

For complete data, see the USG Co.'s "Gypsum Constructions" section.

Pyrobar Partition and Furring Tile are 30 in. long, 12 in. high and of various thickness from 1½ to 6 in. Pyrobar Tile meets fully the standard specifications for Gypsum Partition Tile or block of the American Society for Testing Materials. All Pyrobar Gypsum Tile bear the trade-mark. Column fireproofing is accomplished either with 2-in. solid or 3-in. hollow Pyrobar Partition Tile.

Pyrobar Beam and Girder Fireproofing is made from the same materials as Pyrobar Partition Tile. Specially formed Pyrobar Shoe Tile, Angle Tile and Soffit Tile, which fit over the lower flanges of the steel are used to fireproof steel flanges of beams and girders.

*Registered Trade-Mark

METAL LATH and ACCESSORIES

INTRODUCTION

That the United States Gypsum Company might furnish all materials required for lathing and plastering, it acquired the metal lath division of the Youngstown Pressed Steel Company and the North Western Expanded Metal Company, both for many years well and favorably known in the industry. As a result, those whom the company serves have the advantages of mixed car shipments and of centralized responsibility.

The high quality products of the two metal lath companies will be found in the Red Top Line of Metal Lath Products. In addition, the Red Top Line includes many special accessories. All brands and types of metal are distinctly tagged for identification.

NOTE—*For application, see Master Specifications, pages 29 and 30.*

RED TOP* DIAMOND MESH LATH (JUNIOR MESH)

Description—A small (5/16" x 9/16") diamond mesh expanded metal lath (patented). The stiff sheets are easy to erect.

The small mesh enables the lather to engage a greater number of strands in nailing or tying, yet the "diamonds" are amply large to freely admit the tie wire.

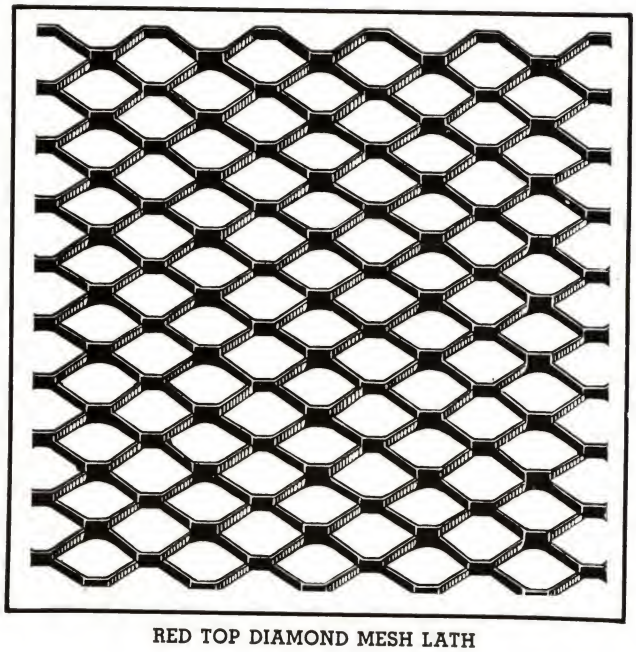
Mortar spreads easily on the smooth stiff surface, without waste and the small mesh affords a superbly keyed bond.

Weights—2.2, 2.5, 3.0, 3.4 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black in all weights. (2) Galvanized steel in 2.5 and 3.4 lb. weights. (3) Copper bearing steel (so tagged), painted black in 3.0 and 3.4 lb. weights. (4) Armco Ingot Iron (so tagged), painted black in 3.4 lb. weight.

Self-furring and Corrugated—All above weights and materials furnished in the Self-furring and Corrugated types.

Sheet Size—27 x 96 in., packed 10 sheets (20 sq. yds.) per bundle. Also size 24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle on order.



RED TOP DIAMOND MESH LATH

RED TOP 1/8 in. Z-RIB LATH (Flat Rib)

Description—A distinctive type of flat rib lath for nailing on wood construction or tying on metal furring.

The narrow "Z" ribs (1/8 in. deep, 1 1/2 in. o.c.) add exceptional rigidity and provide shelves which hold the wet plaster in place, both front and back, without waste.

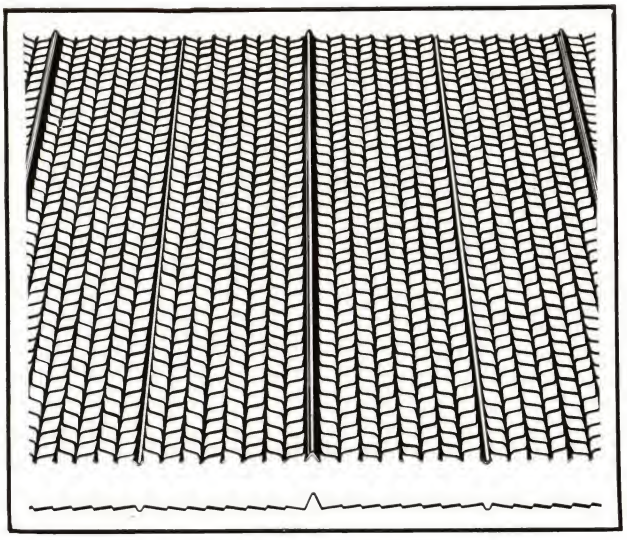
Weights—2.75, 3.0, 3.4 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black, in all weights. (2) Copper bearing steel (so tagged), painted black, in 3.4 lb. weight. (3) Galvanized steel in 3.4 lb. weight. (4) Armco Ingot Iron (so tagged) painted black, in 3.4 lb. weight on special order.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.

RED TOP 1/8 IN. Z-RIB LATH

*Trade-Mark



RED TOP ⅜ IN. RIB LATH

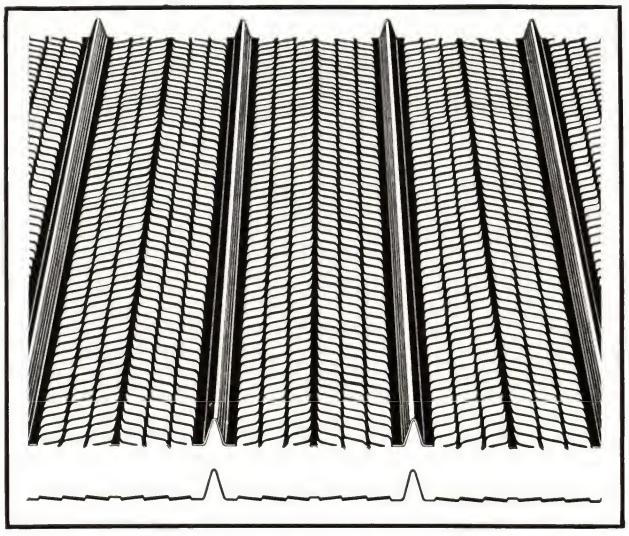
RED TOP ⅜ in. RIB LATH

Description—A very rigid reinforcement for use in floor and ceiling construction with steel joists, also ceilings under steel tile construction and where wide spacing of supports is desired. It provides for nested lap at the outside ribs with no lumps. Its use assures a permanent, economical and absolutely satisfactory result in every way.

Weights—3.0, 3.4, 4.0 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black, in all weights. (2) Copper bearing steel (so tagged), painted black, in 3.4 lb. weight. (3) Armco Ingot Iron (so tagged), painted black, in 3.4 lb. weight. (4) Galvanized steel in 3.4 lb. weight.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.



RED TOP ¾ IN. RIB LATH

RED TOP ¾ in. RIB LATH

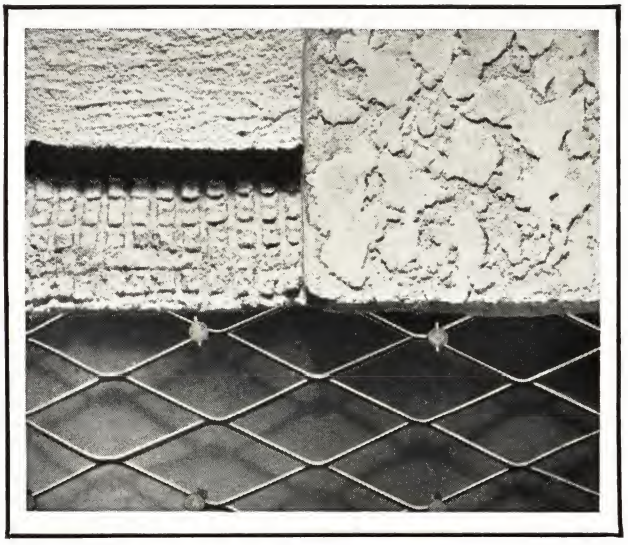
Description—The exceptional stiffness (ribs ¾ in., 4.8 in., o.c.) of this heavy weight, self-furring, expanded metal lath adapts it particularly for centering and reinforcement for concrete roofs and floors, and for plaster partitions and ceilings on extremely wide spacing of supports. Advantageously used on many forms of special work, such as column and beam protection, balconies, concrete tanks and fences, etc.

Weights—.50 (28 ga.), .60 (26 ga.), .75 (24 ga.) lb. per square foot.

> **Note**—*¾-in. Rib Lath is sold by the square foot. All other lath types sold by the square yard.*

Materials—(1) Open hearth steel, painted black. (2) Copper bearing steel (so tagged), painted black (on special order only).

Sheet Size—24 in. wide, 8, 10 and 12 ft. long (other lengths on special order).



RED TOP EXPANDED STUCCOMESH

RED TOP EXPANDED STUCCOMESH

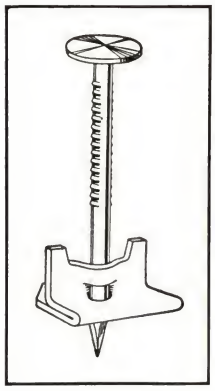
Description—An expanded metal reinforcement for exterior stucco, cold-drawn from the highest grade of copper bearing steel into diamond mesh 1⅜ x 3⅛ in. wide. Its diagonal strands provide a correct distribution of steel to overcome the initial shrinkage, temperature changes and wind stresses, and a positive protection against unusual shocks. Apply with Red Top Economy Stucco Furring Nails.

Weights—1.8, 3.6 lb. per sq. yd.

Materials—Copper bearing steel (so tagged), painted black. (Plain steel and galvanized steel on order.)

Sheet Size—48 in. wide x 99 in. long. Packed 10 sheets (36⅔ square yards) to the bundle.

STUCCO FURRING NAILS



Description—A special nail for applying and furring Red Top Stuccomesh illustrated on page 13. It provides a furring device with sliding spacer and rib, which securely holds the reinforcing mesh free of the sheathing in the center of the stucco slab.

Size—1½-in. nail, ⅜-in. spacer.

Packed—Packed 850 nails per box, 10 boxes (8500 nails) per case. One box is estimated as sufficient for 50 sq. yds.

RED TOP BOSTWICK SHEETLATH

Description—A stiff, heavy weight sheet lath particularly adapted to reinforcement of plaster, cement reinforcement for tile, marble, etc.

Materials and Weights—Open hearth steel, painted black, 4.5 lb. per sq. yd. Galvanized steel, 5.2 lb. per sq. yd.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.

RED TOP CORNERITE

Description—Diamond Mesh Angle, with special selvage edge.

Size and Weight—3 x 3 x 96 in., packed 504 ft. per bundle. (Other sizes on order.) 125 lb. per 1000 ft.

RED TOP STRIPLATH

Description—Diamond Mesh Lath Strips with special selvage edge.

Size and Weight—3 x 96 in., packed 504 ft. per bundle. (Other sizes on order.) 60 lb. per 1000 ft.

BASE SCREEDS and PICTURE MOULD

Description—Base screeds form a dividing line and screed between plaster walls and cement or composition base. A concealed picture mould and screed.

Material—Galvanized steel of 26 gauge.

TYPES and WEIGHTS

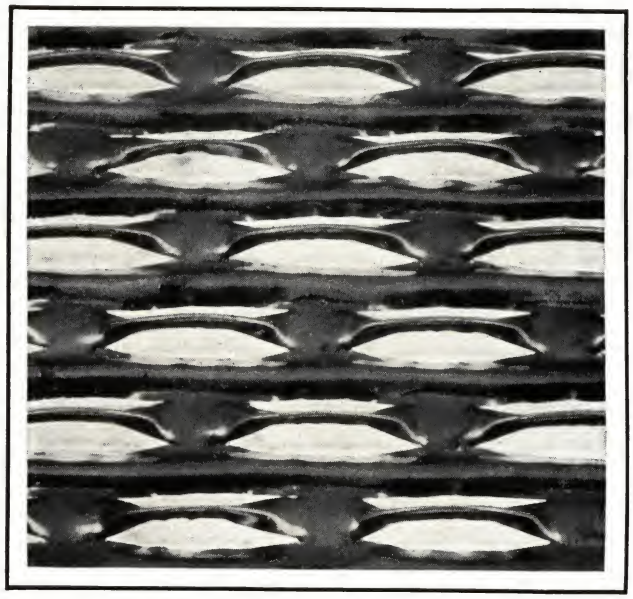
No. 3A—Expansion Flush Screed, ½-in. ground; weight 230 lb. per 1000 lin. ft.

No. 6A—Plain Screed, ½-in. ground; weight 160 lb. per 1000 lin. ft. (¾-in. ground on order.)

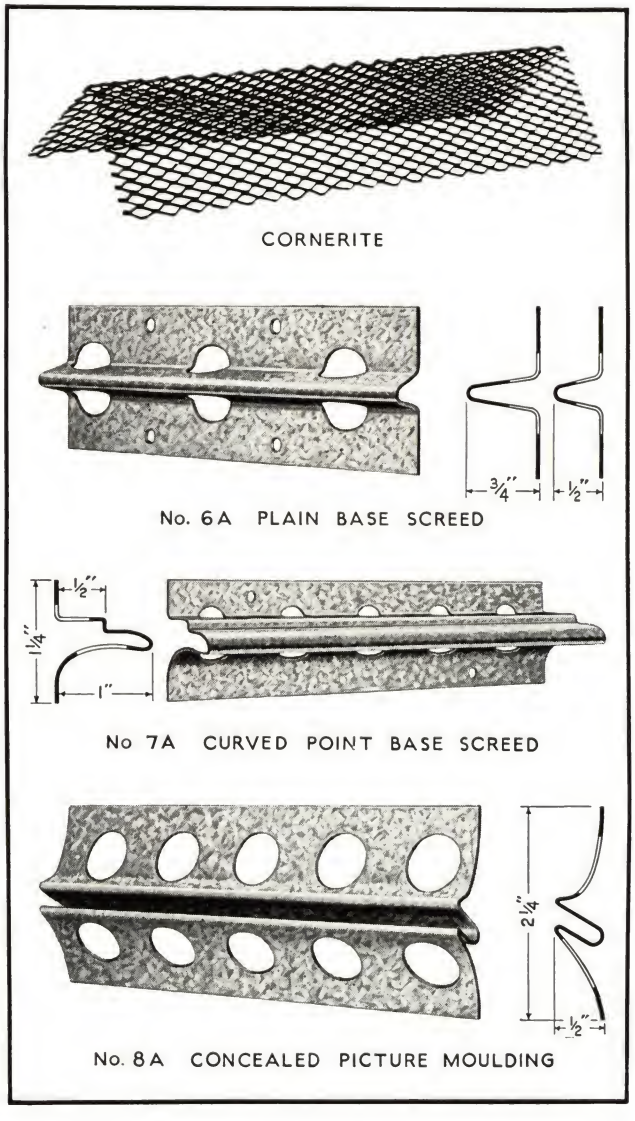
No. 7A—Curved Point Screed, ½-in. ground; weight 195 lb. per 1000 lin. ft.

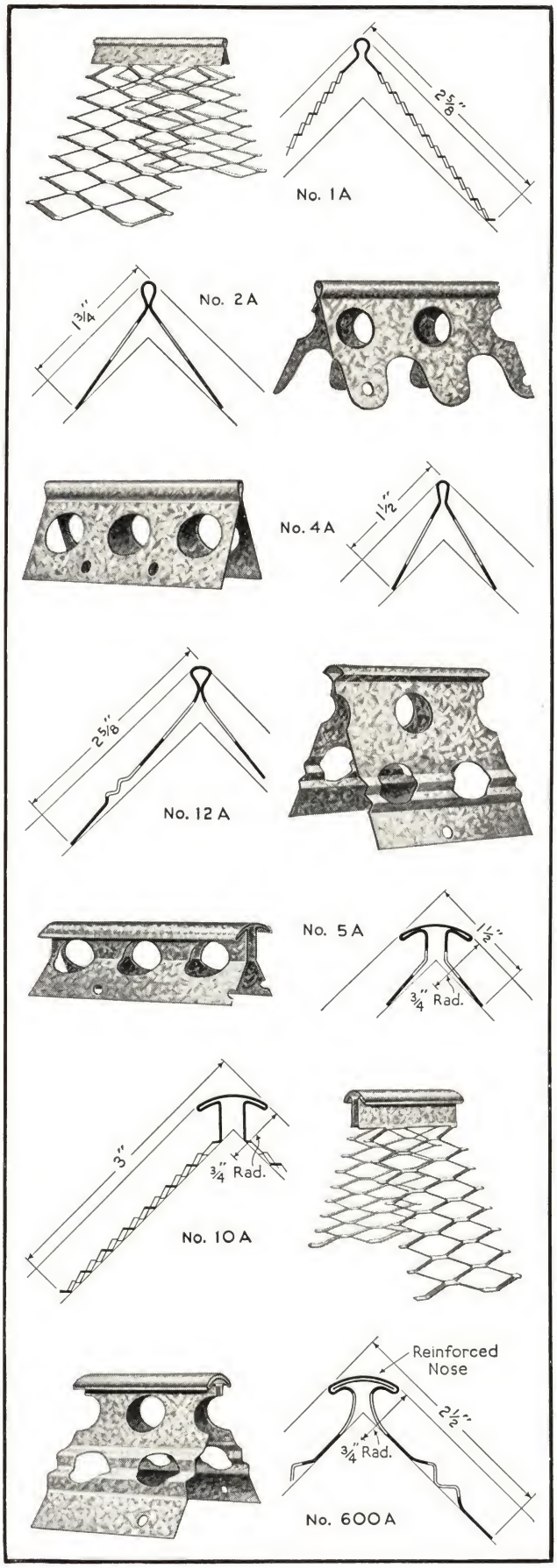
No. 8A—Picture Mould; weight 260 lb. per 1000 lin. ft.

Packed—Packed 10 pieces per bundle.



RED TOP BOSTWICK SHEETLATH





RED TOP CORNER BEADS

Description—A complete line of standard, high grade corner beads adapted to every construction need.

Material—Galvanized steel 26 gauge. 24-gauge material also furnished on special order.

SMALL NOSE CORNER BEADS TYPES and WEIGHTS

No. 1A—2½-in. Expansion Flange Type—230 lb. per 1000 lin. ft.

No. 2A—1¾-in. Short Scalloped Flange Type—220 lb. per 1000 lin. ft.

No. 4A—1½-in. Flange Standard Type—200 lb. per 1000 lin. ft.

No. 12A—2½-in. Wide Flange Type—350 lb. per 1000 lin. ft.

No. 16A—2½-in. Wide Scalloped Flange Type—320 lb. per 1000 lin. ft.

BULL NOSE CORNER BEADS TYPES and WEIGHTS

No. 5A—1¼-in. Short Flange ¾ in. Radius Bull Nose —245 lb. per 1000 lin. ft.

No. 10A—2½-in. Expansion Flange ¾ in. Radius Bull Nose—375 lb. per 1000 lin. ft.

No. 80A—2½-in. Expansion Flange 1½ in. Radius Bull Nose—1000 lb. per 1000 lin. ft.

No. 90A—2½-in. Expansion Flange 2 in. Radius Bull Nose—1050 lb. per 100 lin. ft.

No. 600A—2½ in. Solid Flange ¾ in. Radius Bull Nose—reinforced nose—570 lb. per 1000 lin. ft.

No. 603A—2½ in. Solid Flange 1½ in. Radius Bull Nose—reinforced nose—900 lb. per 1000 lin. ft.

No. 14A—2½ in. Solid Flange ¾ in. Radius Bull Nose —non-reinforced nose—420 lb. per 1000 lin. ft.

Packed—Crated approximately 500 lineal feet per crate, or packed 10 pieces per bundle. Expansion Beads crated only.

NO. 9A HUMP CLIPS

A 3-inch clip attachment for short flange beads to facilitate erection. Made from blued steel. Used generally with No. 5A Bull Nose Bead. Packed in boxes of 1000 each weighing 25 pounds.

RED TOP METAL ARCHES

Description—A ready-formed plastering arch for doorways, etc. Eliminates two difficult operations—the construction of curved wooden forms and the forming of corner beads around these curves. They are made for standard 2 x 4-in. partitions. The various units have many obvious combination possibilities.

Manufactured under License of Merryweather Patent No. 1782147 granted Nov. 18, 1930.

TYPES and SIZES

No. 11—10-in. radius (true half circle) for 20-in. opening (21½-in. stud space).

No. 22—15¾-in. radius (true half circle) for 30-in. opening (33-in. stud space).

No. 33—Gothic design for 2 ft. 6 in. opening (33-in. stud space).

No. 44—Gothic design for 4 ft. 0 in. opening (51-in. stud space). (Can be easily cut down to fit a 42-in. doorway.)

No. 55—Elliptic design for 5 ft. 0 in. opening (63-in. stud space).

No. 66—Elliptic design for 6 ft. 0 in. opening (72-in. stud space).

Material—"Galvannealed" sheet steel.

Packed—In individual one-set cartons.

RED TOP* METAL CASINGS

Description—Sanitary, firesafe and economical steel casings for doors and windows, having expanded metal wings that provide a close, permanent plaster bond which eliminates cleavage cracks that otherwise would develop at the junction of the plaster and the casing.

They are available in four styles of moulding—No. 4, Quarter-Round; No. 6, O.G.; No. 8, O.G.; and No. 9, Special Quarter-Round. See profiles below.

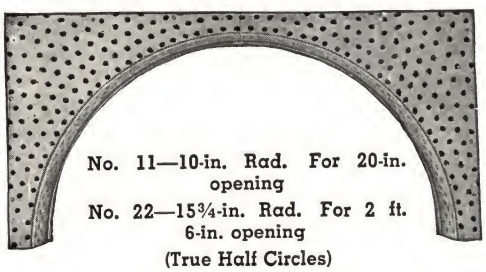
Material—Tight coat 24 ga. galvanized steel.

Stock Lengths and Weights—6, 7, 7½, 8, 9, 10, and 12 feet. Weight (all types) 400 lb. per 1000 lin. ft., crated.

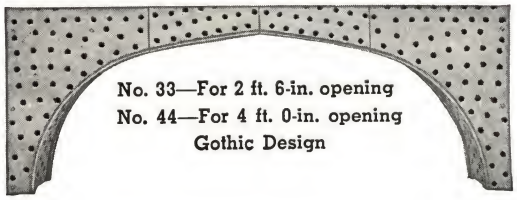
Plaster Grounds—¾ in. standard; ½ and ⅝ in. on order.

Fittings—Patent Casing Locking Clips for attaching Casings firmly to jamb are furnished. Use 4 clips per foot. Weight, 15 lb. per 1000 pieces.

One Piece Stamped Mitres for true corner mitre joints are also furnished for Nos. 4, 6, and 9 style only. Weight, 80 lb. per 1000 pieces.

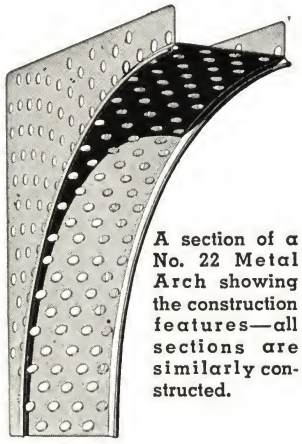


No. 11—10-in. Rad. For 20-in. opening
No. 22—15¾-in. Rad. For 2 ft. 6-in. opening
(True Half Circles)

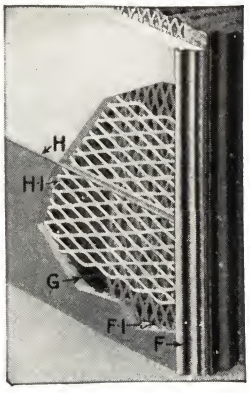


No. 33—For 2 ft. 6-in. opening
No. 44—For 4 ft. 0-in. opening
Gothic Design

No. 55—For 5-ft. opening
No. 66—For 6-ft. opening
Elliptic Design



A section of a No. 22 Metal Arch showing the construction features—all sections are similarly constructed.



No. 4—Quarter Round

No. 6—O.G.

No. 8—O.G.

No. 9—Special Quarter Round

RED TOP METAL PLASTER ARCHES

*Trade-Mark

RED TOP COLD ROLLED CHANNELS

Description—A complete line of cold rolled channels for furring, suspended ceiling and partition construction. The legs and webs are true and have square corners. They can be readily spliced and formed.

Material—Open hearth steel.

Stock Lengths—14, 16, 18, 20 feet.

SIZES and WEIGHTS

Note—*Sold only in full, unbroken bundles.*

¾ in.—276 lb. per 1000 lin. ft.; packed 20 pieces to bundle.

1 in.—332 lb. per 1000 lin. ft.; packed 10 pieces to bundle.

1½ in.—442 lb. per 1000 lin. ft.; packed 10 pieces to bundle.

2 in.—553 lb. per 1000 lin. ft.; packed 10 pieces to bundle.

Box Channels—9/16 x 11/16 in., 276 lb. per 1000 lin. ft., packed 20 pieces to bundle. (16 and 20-ft. lengths only.)

RED TOP LATHING SUNDRIES

General—That the USG line of metal lathing specialties may be complete, the following sundries supplement the Red Top line of Lathing and Plastering Accessories. Besides those here listed and illustrated, any other sundry items needed for lathing application can be furnished.

HOT ROLLED SHAPES and ROUND RODS

Some erectors prefer hot rolled channels for certain types of ornamental form work. They are soft, even grained, and bend readily. Hot rolled flats, angles, and rods fit many special furring requirements.

Flats—1 x ⅛ in., 1 x 3/16 in.

Angles—1½ x 1½ x ⅛ in., 1½ x 1½ x 3/16 in.

Channels—¾ in., 1 in., 1½ in., 2 in.

Round Rods—3/16 in., ¼ in., and 7/32 in. in diameter.

CLIPS, TIE WIRE, NAILS and STAPLES

No. 1 Lath Clips—Lath Clips for attaching diamond mesh or flat lath to ¾-in. channels.

No. 2 Lath Clips—Lath Clips for attaching ⅜-in. Rib Lath to ¾-in. channels.

No. 3 Lath Clips—Lath Clips for attaching ⅜-in. Rib Lath to steel joists.

No. 1½A Channel Clips—Channel Clips for attaching ¾-in. channels to 1½-in. channels.

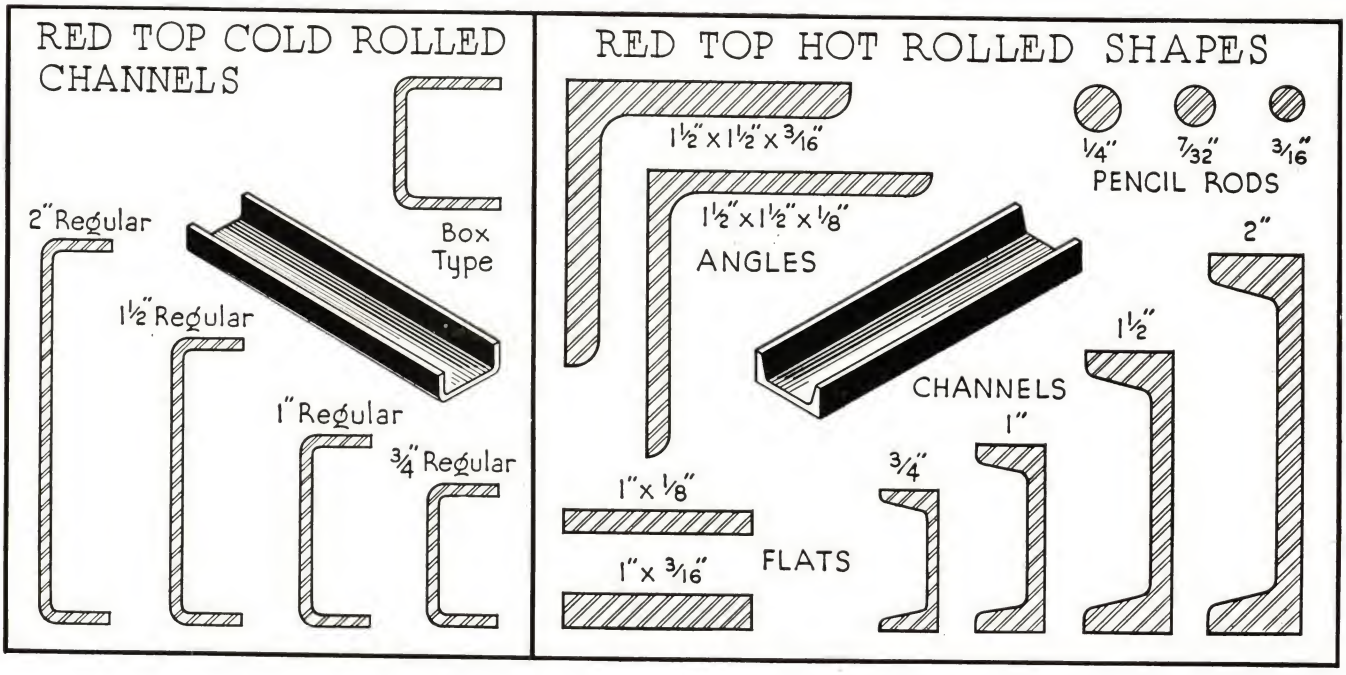
No. 1½B Channel Clips—Channel Clips for attaching 1-in. channels to 1½-in. channels.

No. 2A Channel Clips—Channel Clips for attaching ¾-in. channels to 2-in. channels.

No. 2B Channel Clips—Channel Clips for attaching 1-in. channels to 2-in. channels.

Tie Wire—18, 16, 14, 10, 9, and 8 gauge, galvanized annealed.

Nails and Staples—4d Blued Nails; ¾-in. Concrete Stub Nails; 1 and 1¼-in. Blued Staples.



PLASTERING SYSTEMS

• • •

RESILIENT PLASTERING SYSTEMS

Economical Bases for Plaster
More Sound-Proof and Crack-Proof
Eliminate Lath Streaks

• • •

GENERAL DESCRIPTION

The USG Resilient Plastering Systems are an adaptation of the highly successful USG Sound Control System of resiliently connected walls, ceilings, and floors. This adaptation permits Rocklath (gypsum lath units) or metal lath and plaster to be connected to wood or steel framing or furring members of walls, partitions, and ceilings by means of spring clips which form a floating unit. There are two distinct types of the USG Resilient Plastering System—namely, that using Rocklath for a plaster base and that using Red Top Metal Lath as a plaster base as described on page 19 and detailed on pages 20 and 22.

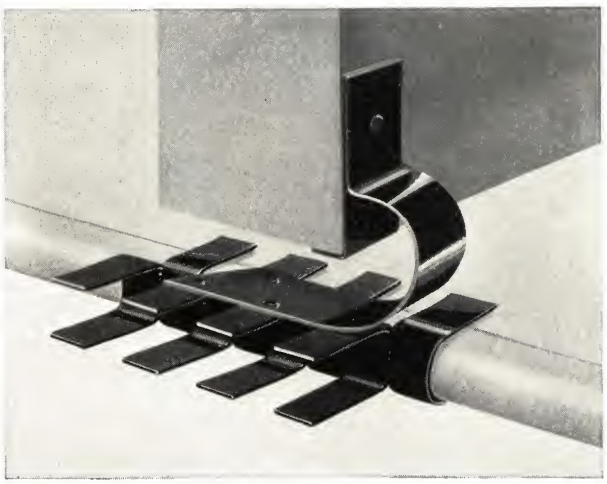
ADVANTAGES

REDUCES PLASTER CRACKS — Ordinary settlement and movement in the structural framing is not transmitted to the plastered walls and ceilings because of the free floating construction.

STOPS SOUND—Sound that strikes the plaster finish and sets it in vibration is largely dissipated by the springs supporting the lath. Instead of the construction vibrating as a unit and thus setting up sound waves on the opposite side of the partition or ceiling, the lath and plaster finish vibrates as a unit suspended on springs more or less separate from its supports.

A partition built according to this specification provides a sound reduction of approximately 46 decibels. (This is equal to or better than two 3-in. tile partitions with a 1-in. air space between—a construction often used for its soundproofing efficiency.)

This system is probably even more useful on ceilings than walls. Its feature of resilient action is very effective against ceiling cracks. It also eliminates lath marks and provides efficient sound insulation between stories.



ELIMINATES STREAKING—The floating construction prevents the formation of lath and joist marks that otherwise develop due to differences in heat passage.

FIREPROOF—All materials used in this construction are fireproof. See pages 1 and 11 for fireproof qualities of gypsum and Rocklath. Metal lath is likewise a recognized fireproof plaster base.

EASILY ERECTED—The system is erected by the lather. The clip is nailed to the wood framing with one Rocklath nail and the Rocklath is set in the clip. In metal lath construction, the lath is wired to pencil rods tied to the clip.

LOW IN COST—The cost of the materials is the same as standard Rocklath and Metal Lath plaster bases plus the addition of the clips, partly offset in the case of the Rocklath wood frame construction by the saving in cost of nails, since only about one-fourth as many nails are required as for the standard Rocklath application.

TWO TYPES of RESILIENT PLASTERING SYSTEM

USG ROCKLATH RESILIENT PLASTERING SYSTEM

WOOD FRAMING—The spring clips attached 16 in. on center to each framing member (about six per sq. yd.) hold the back of the lath ¼ in. away from the face of the framing member. The prongs engage the long side of the Rocklath. The construction is 1⅛ in. thick from the framing member face to the face of the plaster (¼-in. back of the lath, ⅜-in. lath, ½-in. plaster.)

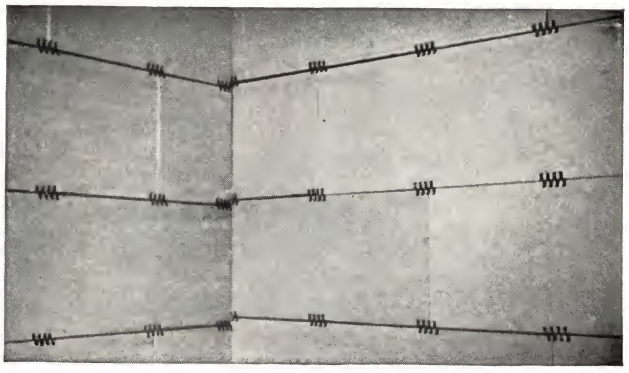
STEEL STUD PARTITIONS—To the floor and ceiling construction are attached, 16 in. o.c., steel stud seats. In the seats are attached USG No. 600 1¾-in. Cold Rolled Channels with crimped flanges. To the stud flanges, resilient clips are attached on both sides supporting gypsum lath in the manner above described. The partition is 4¼-in. thick from face of plaster to face of plaster. This construction is 1¼ in. thick from the face of channel to the face of the plaster.

SUSPENDED FIREPROOF CEILINGS—1½-in. runner channels, 4 ft. apart on centers are suspended in the usual manner from the floor construction. Cross furring of ¾-in. channels, 16 in. o.c., are attached in the usual manner to the runner channels. To the furring channels are attached the resilient clips supporting gypsum lath in the manner above described. In the case of bar joists the runner channels are omitted and the ¾-in. furring channels are clipped directly to the bottom flange of the joist.

The face of plaster in this construction is 1⅜ in. away from the lower face of a ¾-in. channel—1⅛ in. away if a 1-in. channel is used.

NUMBER OF CLIPS REQUIRED—For rough estimating purposes, allow 5½ to 6 clips per square yard of wall and ceiling area.

USG Resilient Plastering System on ceiling and side walls. These walls which are furred over brick use No. 4 clip, ceilings a No. 1 clip.



No special clip used in vertical corner angles. Same clip used here as in rest of wall area. All lathing over wood framework done with three clips or less.

USG METAL LATH RESILIENT PLASTERING SYSTEM

WOOD FRAMING—The spring clips are attached 16 in. o.c. to studs and 12 in. o.c. to joists. The metal lath is wired to pencil rods tied directly to the back face of each clip which sets the back of the lath ⅜ in. away from the face of the framing member. The construction therefore is 1⅛ in. thick from the framing member face to the face of the plaster (⅜ in. space back of lath, ¾ in. lath and plaster thickness).

STEEL STUD PARTITIONS—To the floor and ceiling construction are attached 16 in. o.c. steel stud seats. In the seats are attached specially designed 1¾ in. cold rolled steel channel studs. To the stud double resilient clips are attached 16 in. o.c. and directly to the back faces of these clips pencil rods are tied to which the metal lath is wired. The partition is 4 in. thick from face of plaster to face of plaster.

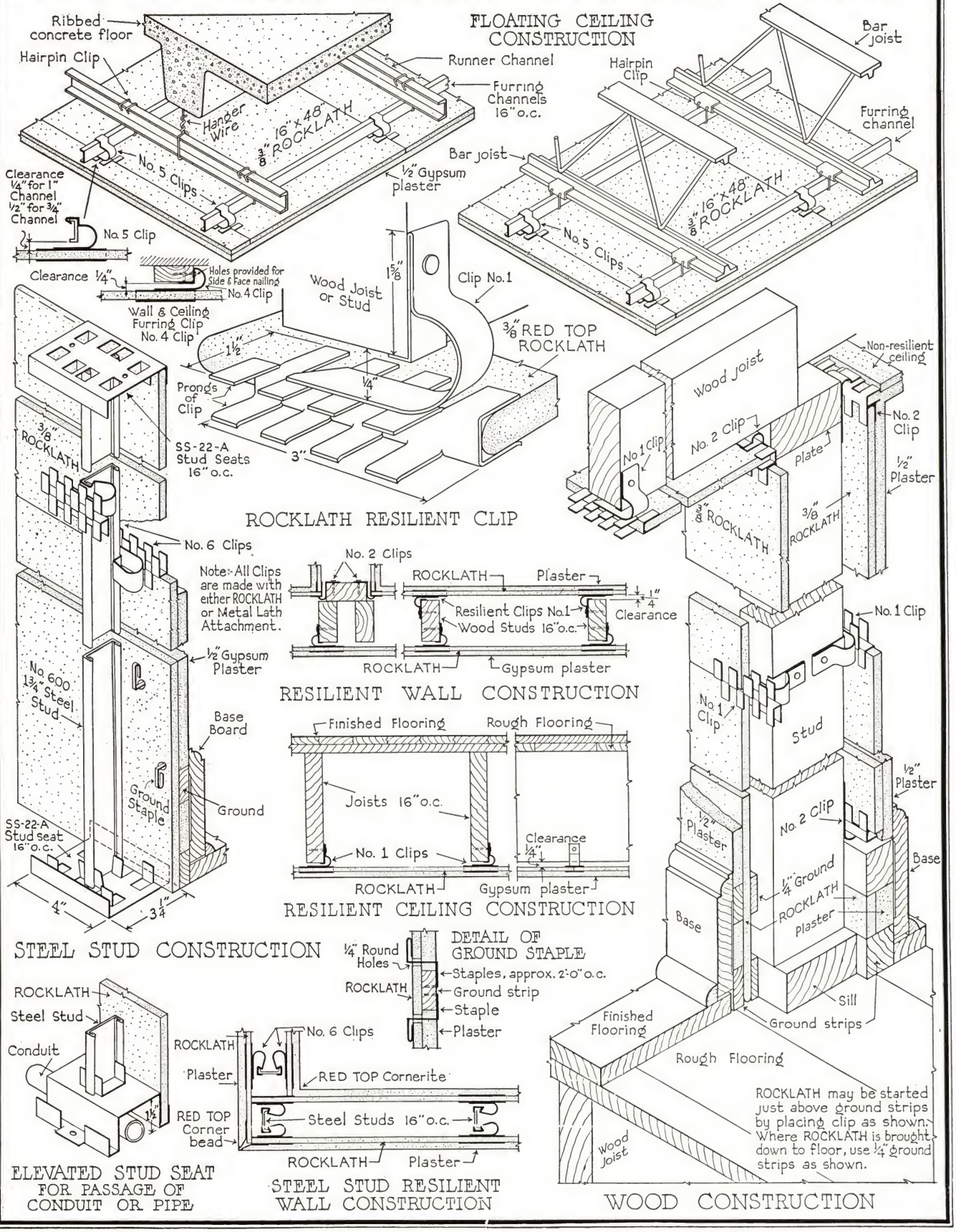
FIREPROOF MASONRY WALL FURRING—Resilient clips are attached 24 in. o.c. vertically to support ¾ in. furring channels wired vertically 12 in. o.c. to the wall side of the clip face (18 in. o.c. for 16 in. spacing of channels). The metal lath is attached in the usual manner to the vertical furring channels. The construction is 1¾ in. thick from face of wall to face of plaster.

SUSPENDED FIREPROOF CEILINGS—1½ in. runner channels, 4 ft. apart on centers, are suspended in the usual manner from the floor construction. Resilient clips are attached 12 or 16 in. o.c. to the runner channels which in turn support ¾ in. channels. The metal lath is attached in the usual manner to the ¾ in. channels.

In concrete joist or pan construction wire hangers are cast into the joists 12 or 16 in. o.c. to which are attached resilient clips carrying ¾ in. channels similar to the construction described above for fireproofing masonry wall furring.

United States Gypsum Company

USG RESILIENT SYSTEM – ROCKLATH DETAILS



Master Specifications

USG ROCKLATH RESILIENT PLASTERING SYSTEM

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words within brackets in bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*The following provisions should be included as they apply under the proper headings of the specifications to be executed by others.*

(1a) CARPENTRY WORK—

(1a1) Furring—All masonry surfaces shall be furred.

(1a2) Framing—All studding, joists, and furring shall be set plumb, level, and true, spaced accurately 16 in. on centers.

(1a3) Grounds—(distance from face of framing member to face of finished plaster)—

1⅛ in. for wood framing and steel furring.
1¼ in. for steel stud partitions.
1⅜ in. for suspended or bar joist ceilings using ¾ in. furring channels (1⅛ in. for 1 in. furring channels).

(1a4) Bucks—Furnish wood bucks of sizes detailed at all door openings rigidly attached to steel buck supports.

(1b) ELECTRICAL CONSTRUCTION—All outlet boxes, etc., shall be accurately set with their faces flush with the finished plaster as established in paragraph (1a3) above.

(2) WORK INCLUDED

NOTE—*Here list and locate all walls, partitions, and ceilings to be constructed with USG Rocklath Resilient Plastering System.*

(3) MATERIALS

(3a) GENERAL—All materials shall be made by the United States Gypsum Company, 300 West Adams Street, Chicago.

(3b) METAL FURRING—Red Top cold rolled channels, 1½ in. for runner channels and ¾ in. for cross and wall furring.

(3c) ROCKLATH METAL PARTITION STUDS—USG No. 600 1¾ in. Cold Rolled Channels furnished with USG Rocklath Resilient Plastering System Stud Seats No. SS-22A.

(3d) GYPSUM LATH—Rocklath, ⅜ in. thick, 16 in. wide, 32 or 48 in. long.

(3e) RESILIENT CLIPS—Clips for attachment of lath to framing shall be USG Rocklath Resilient Clips. These shall be of such design as to adapt them for use in the field of the lath, angles, for starting and finishing at floors and ceilings, and surrounding windows and other openings.

(3f) CORNERITE—3 x 3-in. Cornerite for all internal angles where gypsum lath is used.

(3g) CORNER BEADS—[Specify No. and Type] Red Top Galvanized Expanded Metal Corner Beads.

(4) APPLICATION

(4a) STANDARD WOOD FRAMING—Starting at the floor, ground strips shall be applied which also serve as a backing for wood trim. A No. 2 clip shall be nailed to the stud with clearance above the ground strip and the Rocklath inserted in the clip. Framing members are spaced 16 in. on center and a clip applied at each framing member. Next place No. 1 clips over the upper edge of the first course of lath units and attach the clips to the studs as above. Continue with successive courses of lath in similar manner, breaking end joints of lath units in alternate courses. A No. 2 Clip shall be used at the angle where the wall meets the ceiling.

(4b) STEEL STUD PARTITIONS—METAL FURRING—

(4b1) Attach metal stud seats to floors and ceilings spaced accurately 16 in. on centers and in line vertically. Set channel studs in seat clips plumb and true.

(4b2) Where so indicated on plans **[or listed in schedules]** exterior walls shall be furred with ¾-in. channels spaced 16 in. o. c. with flange to wall. Secure furring channels to floors and ceilings in a substantial manner. Substantially secure channels to walls, every 3 ft. approximately with special hook nails driven into the mortar joints. Provide rigid framing at all openings.

(4b3) Starting at the floor hook No. 6B clips on each channel with the lower prongs of clips resting directly on the floor. In the upper prongs of these clips set the bottom of the first row of gypsum lath units. Place the next row of No. 6B clips over the upper edge of the first course of lath units, each attached to a metal stud. As located, attach ½ in. thick grounds with ground staples to the face of the lath. Continue with successive courses of lath units, breaking end joints in alternate courses securing each with No. 6B clips set over the upper edges each attached to the metal stud. Secure top of the last course of units at the ceiling in the stud seat clips.

(4c) STEEL FURRED OR SUSPENDED CEILINGS—

NOTE—*Construction of furred or suspended ceilings shall be as specified in (B2), page 28.*

Starting at one side of the ceiling hook a row of No. 5 clips on the flanges of the ¾-in. runner channels. Slip the edge of the first lath course into the clips thus provided. Hook the next row of No. 5 clips over the channel runners spaced 16 in. o. c. and then slip the clip over the outer edges of the lath. Continue successive courses of lath in similar manner, breaking end joints in alternate courses.

(4d) CORNERITE—Secure Cornerite over the face of the Rocklath in all internal angles of walls and ceilings with staples placed along the outer edge 12 in. apart on centers staggered.

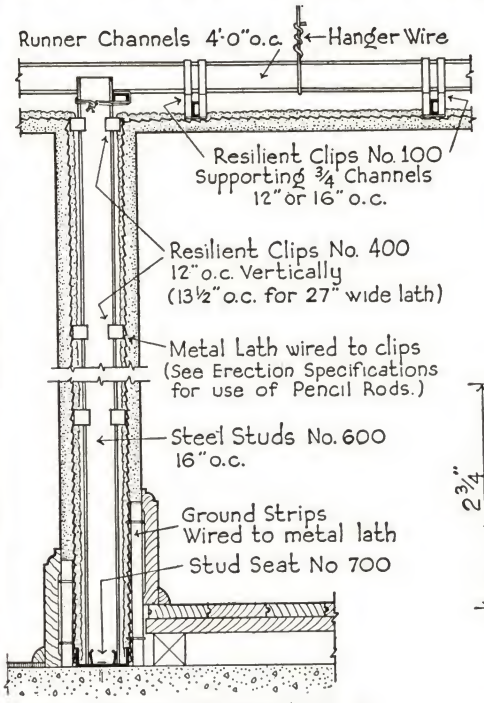
(4e) CORNER BEADS—All external corners shall be reinforced for their full height or length with Corner Beads.

(5) PLASTERING

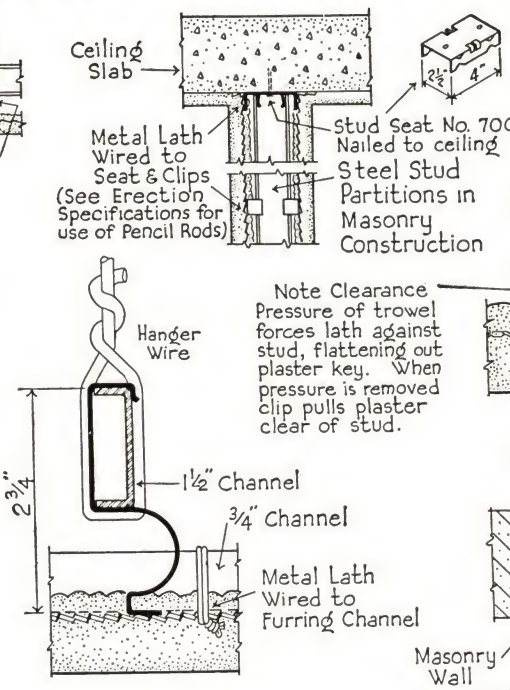
Do not wet lath. Apply plaster in three (3) coats (scratch, brown, and finish) to a full ½ in. thickness. Scratch coat shall be well scratched in to fill all interstices between lath units. Allow scratch coat to set and dry over night before brown coat is applied. (Do not "double back" with brown coat.)

NOTE—*Otherwise plastering shall be applied as specified in Master Specifications, pages 26 to 34 inclusive.*

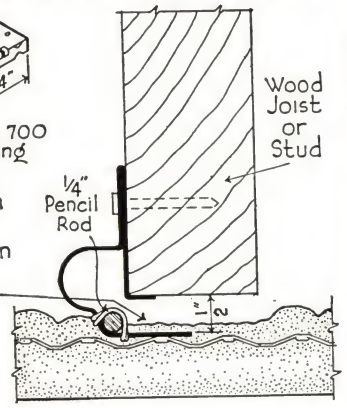
USG RESILIENT SYSTEM — METAL LATH DETAILS



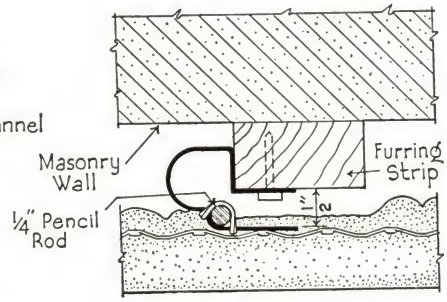
STEEL STUD PARTITION & SUSPENDED CEILING CONST.



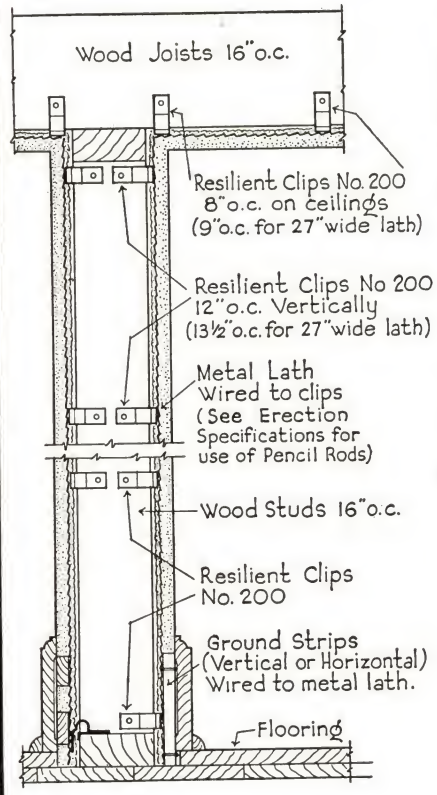
CLIP No. 100
For Suspended Ceilings



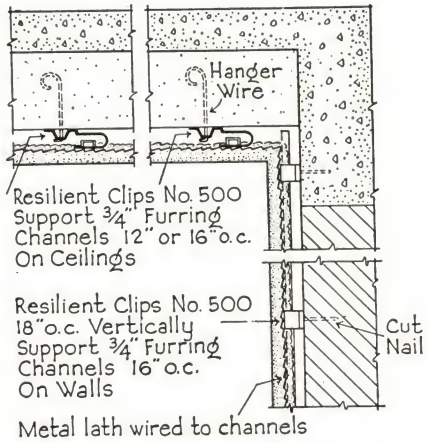
CLIP No. 200
For Wood Construction



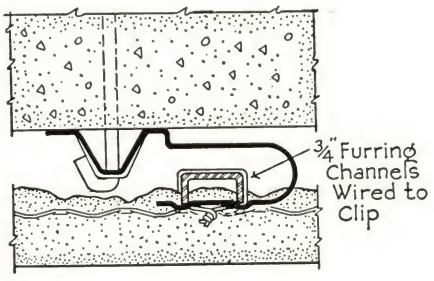
CLIP No. 300
For Wood Furring on Masonry Construction



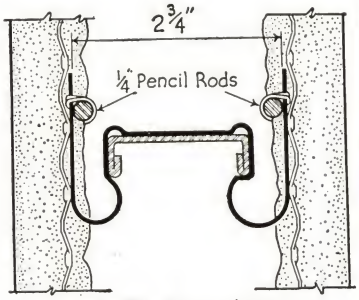
WOOD CONSTRUCTION



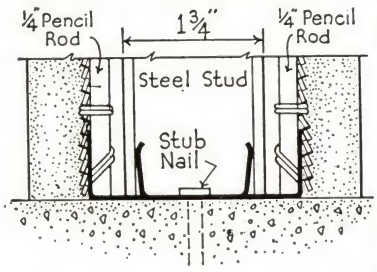
MASONRY CONSTRUCTION



CLIP No. 500
For Masonry Walls and Ceilings



CLIP No. 400
STEEL STUD No 600
For Steel Stud Partitions.



STUD SEAT No. 700
For Steel Stud Partitions

Master Specifications

USG METAL LATH RESILIENT PLASTERING SYSTEM

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words within brackets in bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*Correlative Provisions given in paragraph 1, page 21, applying to Rocklath Resilient Systems, apply also to these specifications.*

(2) WORK INCLUDED

NOTE—*Here list and locate all walls, partitions, and ceilings to be constructed with USG Resilient Plaster.*

(3) MATERIALS

(3a) GENERAL—All materials shall be made by the United States Gypsum Company, 300 West Adams Street, Chicago.

(3b) METAL FURRING—Red Top **[cold] [hot]** rolled channels, 1½ in. for runner channels and **[¾ in.] [1 in.]** for cross and wall furring.

(3c) METAL PARTITION STUDS—Specially designed No. 600 1¾ in. cold rolled steel channel studs with USG Resilient Plastering System stud seats.

(3d) PENCIL RODS—Pencil Rods shall be ¼ in. in diameter.

NOTE—*Pencil Rods are recommended. See detail page 22.*

(3e) METAL LATH—[Specify brand, material and finish] lath; **(?)** lb. for horizontal positions and **(?)** lb. for vertical position.

NOTE—*See (Cld), page 29. Red Top Junior Diamond mesh Lath is recommended—2.5 lb. per sq. yd. for walls and 3.0 lb. per sq. yd. for ceilings of wood construction and 12 in. spacing of furring channels. For 16-in. ceiling furring channel spacing, use 3.4 lb. weight. If Red Top ⅛-in. Z-Rib Lath (Flat Rib) or ⅜-in. Rib Lath are selected, a weight of 3.0 lb. per sq. yd. will be adequate for both walls and ceilings.*

(3f) WIRE—Wire shall be No. 18 ga. Galvanized Annealed Tie wire.

(3g) RESILIENT CLIPS—Clips for attachment of lath to framing shall be USG Resilient Steel Clips. These shall be of such design as to adapt them for use in the field of the lath, angles, for starting and finishing at floors and ceilings, and surrounding windows and other openings.

(3h) CORNER BEADS—[Specify No. and Type] Red Top Galvanized Expanded Metal Corner Beads.

(4) APPLICATION

(4a) STANDARD WOOD FRAMING—[Wood studs] [wall furring] [and] [joists] shall be spaced 16 in. O.C.

(4a1) Starting at the juncture of the wall and ceiling, attach No. 200 clips with 4d common nails through clip nail holes, spacing clips **[16 in. O.C.] [12 in. O.C.] [along studs] [wall furring] [and] [12 in. O.C.] [8 in. O.C.] [along joists].**

NOTE—*For spacings, see Note B under (4a2).*

(4a2) Pencil Rods shall be wired to the back face of the clips, inside the wiring tongue, fitted into the radius at the shoulder.

NOTE A—*Pencil Rods may, optionally, be run at right angles to the direction of the framing members, wired to the out side face of the clip tongue.*

NOTE B—*Pencil Rods may be eliminated by spacing clips 12 in. O. C. along studs (13½ in. for 27 in. wide lath) and 8 in. O. C. along joists (9 in. for 27 in. wide lath) and attach lath directly to the clips.*

(4a3) Metal lath shall be wired to **[pencil rods at 6 or 8 in. intervals] [directly to clip faces].** Lath at junction shall be bent over 6 in. from ceiling on to wall.

(4b) STEEL STUD PARTITIONS—No. 600 Channel Studs shall first be set in No. 700 Stud Seats at top and bottom and then set in position spaced 16 in O.C. Stud Seats shall then be securely nailed to floor and ceiling.

(4b1) Starting at the juncture of the wall and ceiling, attach No. 400 clips to Channel Studs, spaced **[16 in. O. C.] [12 in. O.C.]** by springing the clips (deep throat side first) over the channel flanges.

(4b2) Pencil Rods shall be wired to the back face of the clips, inside the wiring tongue.

NOTE—*See Note B under (4a2) above.*

(4b3) Metal lath shall be wired to **[pencil rods at 6 or 8 in. intervals] [directly to clip faces].**

(4c) MASONRY WALLS, CONCRETE JOISTS, ETC.—No. 500 clips shall be securely attached to **[brick and clay tile walls with 10d cut nails] [Pyrobar walls with 2 in. staples] [concrete slabs or joists by No. 9 ga. wire or a 10d hook nail which has been placed in position before concrete is poured and extending 1¼ in. below the surface].**

(4c1) Spacing of clips along **[walls] [flat concrete slabs]** shall be **[24 in. O.C. for 12 in.] [18 in. O.C. for 16 in.] [15 in. O.C. for 19 in.]** furring channel spacing.

(4c2) Spacing of clips on concrete joists spaced 24 to 26½ in. O.C. shall be 12 in. O.C. along joists.

(4c3) Furring channels, set flat (not on edge) with flanges in contact with the lath, shall be attached to the **[inside] [outside]** face of the clip tongue with a double strand of wire.

(4c4) Metal lath shall be wired to furring channels at 8 in. intervals.

(4d) SUSPENDED CEILINGS—Hanger rods (¼, $\frac{3}{16}$, or $\frac{7}{32}$ in. in diameter) set in concrete forms and cast into concrete shall be spaced 4 ft. O.C. in each direction extending **[give depth of suspended ceiling]** plus 12 in. for tying. 1½-in. runner channels shall be attached to hanger rods.

(4d1) Running at right angles to runner channels, furring channels spaced **[12 in.] [16 in.]** O.C. shall be attached by slipping No. 100 clips over the furring channels and hooking the upper portions of the clips over the runner channels.

(4d2) Metal lath shall be wired to furring channels at 8 in. intervals.

(4e) CORNER BEADS—All external corners shall be reinforced for their full height or length with Corner Beads.

(4f) PLASTERING—

NOTE—*Follow standard specification for plastering over metal lath as given in Master Specification, pages 30 to 33 inclusive. Plaster shall be full ¾ in. from back face of lath to face of plaster.*

USG STANDARD X* PLASTERING SYSTEM

This system adequately provides at moderate cost all the factors for a satisfactory plastering job—a fireproof, verminproof, non-deteriorating lath with a strong plaster bond and a controlled system of installation. See Rocklath advantages, page 11.

This system has successfully withstood the Standard One-hour Fire Test in accordance with specifications of the American Society for Testing Materials.

Tests showing the strength or resistance to cracking of Standard X Plastering System as compared with standard metal lath and gypsum plaster laid to ¾-in. grounds, show conclusively the superiority of the Standard X System.

This system is formed of Rocklath, Red Top Striplath, Red Top Cement Plaster sanded two to one and United States Gyusum Company finish.

Rocklath is a gypsum lath used as an incombustible, fire-retarding plaster base, especially for frame buildings. It is fireproof, rigid and non-warping. For complete data, see pages 28 to 31.

Specifications will be furnished on request.

USG BRIDJOINT PLASTERING SYSTEM

This is a system for attaching Rocklath to wood framing so that all end joints come between supports (see illustration). Rocklath is nailed to framing in the standard way except end joints fall between supports where these are reinforced with a W-22 clip. Plaster cracking is minimized because end joints are kept off framing, corners are reinforced with a W-33 clip and are not nailed, and a full plaster thickness is insured because prongs on clips provide spot grounds. In addition, odd length boards can be used reducing waste and framing need not be exactly 16 inches on center.

USG FREFLOTE BRIDJOINT SYSTEM

Similar to the Bridjoint system described above, except that Rocklath is attached to framing members with semi-rigid Freflote Bridjoint clips No. 60, 61, or 62 instead of with nails. Plaster cracking is further minimized because the stress and strain caused by framing movements is partially absorbed by the clips and not entirely transferred to the plaster. Rocklath end joints fall between framing members and are reinforced with W-22 clips. Freflote Bridjoint clips Nos. 60 and 61 used in wood frame construction (No. 61 eliminates "joist marks") and No. 62 used to attach Rocklath to ¾ in. steel channel construction.

USG FREFLOTE PLASTERING SYSTEM

The only difference between this system and the Freflote Bridjoint System described above is that the W-22 clip used to reinforce Rocklath end joints is eliminated. In this system Rocklath is applied so that end joints occur on framing members and the Freflote clips No. 63, No. 64, and No. 65 are large enough to provide end joint reinforcement as well as attachment to the framing members. Clips No. 63 and No. 64 used in wood frame construction (No. 64 clip eliminates "joist marks") and No. 62 clip used in ¾ in. steel channel construction.

NOTE—*The company will furnish on request bulletins giving complete information on these systems. Each system is sold only as a unit, including USG Clips, USG Rocklath, and USG Red Top Plaster.*

For maximum performance in reducing plaster cracking and sound transmission and eliminating plaster discoloration, the RESILIENT ROCKLATH PLASTERING SYSTEM is recommended.

*Registered Trade-Mark

TRUSSTEEL* · STUDS

• • •

A MODERN, FIREPROOF SYSTEM OF PARTITION CONSTRUCTION

EASY TO ERECT—Because of practical design, light weight, and the adjustable feature, Trussteel-Hollow Stud Partitions are easily and quickly erected. One workman can erect the system. The studs are placed in runner tracks which are attached to floor and ceiling. They are secured at proper spacing with wire, looped in holes provided on the flanges. Metal lath attachment is standard practice.

ADJUSTABLE—Trussteel-Studs are adjustable to variance in ceiling heights. The sliding extension permits an upward extension of two inches or a reduction from the stock length of six inches. A ten-foot stud, therefore, is adjustable from nine feet, six inches to ten feet, two inches. This adjustable feature which becomes an integral part of a Trussteel-Stud is a time and labor saver.

RIGID—The unique truss design provides a bracing effect which adds rigidity and strength that enables the partition to resist impacts, vibration, etc. When properly erected and plastered, a Trussteel-Partition should have strength equal to a tile or precast block partition of equal thickness.

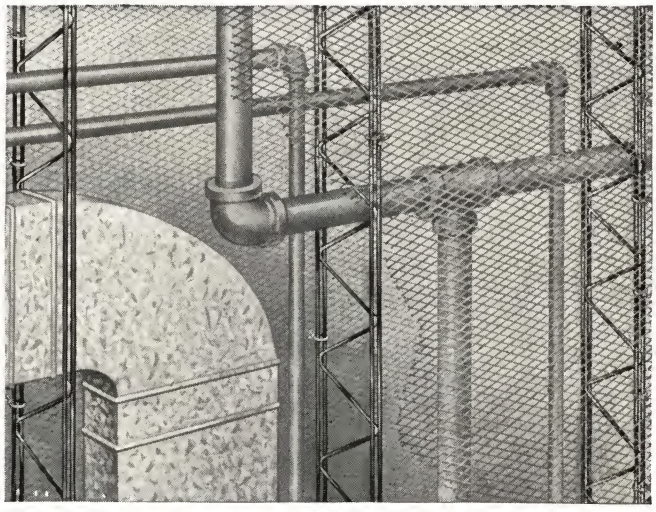
EASY TO PLASTER—Because Trussteel-Studs provide a rigid support for the metal lath plaster base, the procedure of plastering in no way differs from a regular metal lath job. The type of lath to be used depends upon the stud spacing.

CONCEALS VENTILATING DUCTS, PIPES, ETC.—The fact that Trussteel-Studs provide a hollow partition, ventilating ducts, pipes, conduits, etc. can be concealed by running them through the studs in the ample space provided between the cross supports and the uprights. Since the cross-bracings are twelve inches on center, ventilating ducts can be run horizontally, as well as vertically, through the partition. Two-inch pipes can be run through a 3¼-inch Trussteel-Stud.

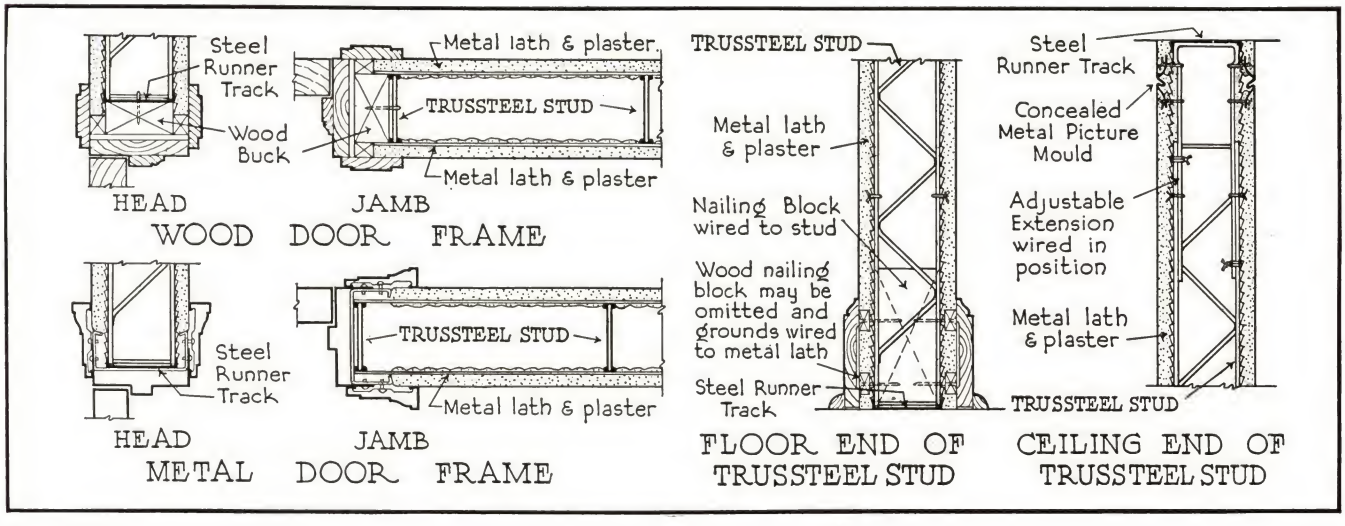
STOCK SIZES—Lengths—7, 8, 9, 10, and 12 feet. These are the stock or "fixed" lengths. The adjustable feature on each of these lengths permit adjustment from six inches under to two inches over the stock length purchased.

Widths—2, 3, 3¼, 4, and 6 inches. Five popular sizes to meet average requirements. Packed in bundles of convenient size to fit order requirements.

RUNNER TRACKS—Made in eight-foot, two-inch lengths. Packed in bundles of convenient size to fit order requirements.



A six-inch Trussteel-Stud Partition allows ample room for concealing 4 in. by 10 in. duct work, both vertical and horizontal runs. In addition, there is unrestricted space for piping.



*Trade-Mark

MASTER SPECIFICATIONS

• • •

INTERIOR LATHING and PLASTERING

• • •

PREFACE

SPECIFICATION FORM—The form of this specification is that of a "Master" which includes all clauses which in ordinary practice apply to average work. All clauses, obviously, do not apply to every building. In formulating the "Interior Lathing and Plastering Specifications" for a particular building, only those clauses which apply should be selected for inclusion. Special provisions or methods but seldom required are not included—such clauses should be added wherever necessary to clearly define the procedure and especially to obviate controversy involving responsibility and cost.

LOCAL ORDINANCES—Correlate these specifications with the requirements of Local Ordinances and Trade Customs relating to this division of the work.

ALTERATIONS and ADDITIONS — These specifications cover new work only. For additions and alterations add such clauses covering repairs and replacements and the joining of old and new work as may be required.

ADVISORY SERVICE — The technical staff of the United States Gypsum Company is at all times accessible for advice and recommendations in the formulating of the specification for Interior Lathing and Plastering. Special data, the result of much extended research work, relating to the selection and application of Interior Plastering and "Explanations of Job Conditions which Affect Plastering" will be furnished on request.

NOTES—Notes in italics are explanatory or advisory only and should not be included in the specification.

SELECTIVE WORDS or PHRASES—Wherever words or phrases occur in the body of the specification paragraph printed in bold face type and enclosed in brackets, choose that word or phrase which applies to the particular work, omitting those that are irrelevant. Wherever the word "specify" occurs enclosed in brackets, thus **[specify],** add the particular word or clause applicable, optional with the specification writer.

(A) GENERAL PROVISIONS

NOTE—*For complete plastering systems see USG Resilient Plastering Systems and Standard X Plastering System, pages 18 to 24 inclusive.*

NOTE—*For Sabinite Acoustical Plaster, see the* United States Gypsum Company's *complete section covering "Sound Control Service."*

NOTE—*For "Master Specifications" for "Weatherwood Insulating Lath" see the* United States Gypsum Company's *complete section covering "Thermal Insulation."*

(A1) GENERAL CONDITIONS

The general conditions governing the General Contract apply to the work under this division.

NOTE—*The American Institute of Architects' Standard forms of General Conditions is advocated.*

(A2) WORK INCLUDED

(A2a) The work included under this heading shall be the following:

(A2b) All metal suspended or furred ceilings.

(A2c) All metal stud partitions.

(A2d) All metal wall furring.

(A2e) All miscellaneous metal furring.

(A2f) All lathing.

(A2g) All plastering.

(A3) GENERAL SCOPE

NOTE—*List and locate either in schedules on plans or here portions of the building to be finished, the base to receive plaster and here include sufficient data to insure accuracy in estimates.*

(A3a) All plastering, unless otherwise specially noted, shall be three (3) coat work—scratch, brown, and finish coats.

(A3b) The following require no plaster **[list and locate].**

(A3c) The following require but **[one (1)] [two (2)]** coats of plaster **[list and locate].**

(A3d) Ceilings noted as furred **[on plans] [in schedules]** are furred with **[metal] [wood].**

(A3e) All supports for lath are spaced 16 in. on centers.

(A3f) All exterior walls are furred with **[specify].**

(A3g) Exterior walls are not furred. Plaster shall be applied directly on the **[specify].**

(A3h) Partitions are of **[specify].**

(A3i) Walls back of finished tile work shall be lathed only. No plaster shall be applied.

(A3j) Omit all plaster on interior masonry walls and **[hollow tile] [Pyrobar]** partitions back of marble work.

(A3k) All exterior masonry walls, not furred, shall receive one coat of plaster back of marble work.

(A3l) Omit the finish coat of plaster on all stud walls back of **[marble work] [blackboards] [specify].**

(A3m) Omit the finish coat of plaster back of all **[wood wainscots] [specify]** and similar solid trim.

(A3n) **[Specify]** shafts shall be plastered full height.

(A3o) All chases in unfurred masonry walls which are to be plastered shall be lathed with metal lath. Lap the masonry at least 3 in. and secure at masonry joints. Wide chases (over 16 in.) shall be furred to receive lath.

(A4) SCAFFOLDING

(A4a) This contractor shall provide and erect all scaffolding, staging, etc., necessary for the proper execution of his work.

(A4b) He shall co-operate with other trades to the extent that erection of scaffolding shall not conflict with the execution of other work immediately preceding or carried on, without undue conflict, simultaneously with the lathing and plastering.

(A4c) If, after due authority has been granted to erect scaffolding, it is necessary to remove parts thereof for the accommodation of others, demolition and re-erection shall be done only after allocation of cost has been equitably adjusted.

(A5) HEAT and VENTILATION

(A5a) Adequate temporary heat and ventilation will be provided by others for the proper execution of work under this contract.

(A5b) This contractor shall provide salamanders, fuel and attendance and shall maintain without fire hazard adequate heat and ventilation for the proper execution of work under this contract.

(A6) CLOSURES

(A6a) Provide temporary cloth closures for all exterior openings during plastering.

(A6b) During the summer months exterior openings shall be screened to prevent plaster from drying out before it has set.

(A7) PROTECTION

(A7a) Adequately protect from damage and plaster droppings all finish of the building.

(A7b) Adequately protect the building with layers of heavy waterproof paper from damage by water at sources, gauging barrels and mixing boxes.

(A8) DAMAGE

Breakage of glass or other damage to the building or equipment through accident or carelessness incident to work under this contract shall be satisfactorily repaired or made good by replacement at this contractor's expense.

(A9) CLEANING

(A9a) At completion, remove all rubbish, plaster droppings, etc., and leave the building broom clean.

(A9b) This contractor shall remove all plaster from glass and other finish and leave in the condition found.

(A10) CUTTING and PATCHING

After the erection of finish by others, this contractor shall, when called upon, cut out where required, patch and point up all finished plaster work and leave the entire work in perfect condition.

(A11) SAMPLE PANELS

This contractor shall furnish and erect, where directed for the approval of the architect, sample panels of one square yard area each, to illustrate each type of finish required under this contract. The finished work shall equal in all respects the approved panels.

(A12) CONCRETE SURFACES

NOTE—*Concrete surfaces to receive plaster must not be smooth. Use rough form boards. Avoid dressed or oiled boards.*

(A12a) Concrete surfaces must be dry and free from dust, oils and efflorescence.

(A12b) Burn off all oil or grease from surface with a torch.

(A12c) Remove efflorescence with a wire brush and wash with a one (1) to five (5) solution of muriatic acid and water. Thoroughly wash off acid with clean water.

(A12d) Surfaces too smooth to receive plaster shall be thoroughly hacked.

(A12e) Hacking will be done by others.

(A13) GROUNDS

All lathing and plastering shall be laid to not less than the following grounds:

¾ in. for **[¼ in. gypsum lath] [wood lath] [expanded metal lath] [⅞ in. for ⅜ in. gypsum lath]; [1 in. for ½ in. insulating board lath];** ⅝ in. for **[brick] [or] [clay tile] [½ in. for Pyrobar].**

NOTE—*See pages 20 to 23 inc. for Resilient System Grounds.*

(A14) GUARANTY

(A14a) This contractor shall guarantee all work and materials under this contract for a period of **[specify]** from the date of completion and acceptance.

(A14b) Any defects attributable to faulty workmanship or material furnished under this contract shall be made good at this contractor's expense.

(A14c) This shall include the cost of repairs or replacement of any decorating or other finish damaged by the defects.

(A15) WORKMANSHIP

All work shall be executed by skilled workmen in a manner to satisfactorily fulfill the provisions of these specifications.

(A16) EXAMINATION

(A16a) All construction to receive lathing and plastering is presumed to be substantial, sound, level, plumb and true.

(A16b) This contractor shall examine all construction, supports and base to receive lathing and plastering and shall report to the architect in writing any defects which will deleteriously affect work under this contract.

(A16c) Failure to so report defects for correction or replacement prior to execution of the work under this contract will be construed as acceptance of the construction and shall not relieve the contractor from obligation under his guaranty.

(B) METAL FURRING · METAL STUD PARTITIONS

(B1) MATERIALS

NOTE—*See page 17.*

(B1a) METAL FURRING—[Specify sizes] Red Top Cold Rolled Channels.

(B1b) METAL PARTITION STUDS—[Specify sizes] Red Top Cold Rolled Channels.

(B2) FURRED or SUSPENDED CEILINGS

NOTE—*See "Standard X Suspended Ceilings," page 24.*

(B2a) GENERAL—Where so indicated on plans **[or listed in schedules]** ceilings shall be furred or suspended with metal furring members.

(B2b) HANGERS—Hangers shall be placed not to exceed 4 ft. center to center in either direction.

The minimum size for hangers shall be No. 8 galvanized wire, 1 x $\frac{7}{16}$-in. flats or $\frac{7}{32}$-in. round mild steel rods.

Upper ends of hangers of wire, rods, or flats, shall be of sufficent length to wrap around beams or provide a suitable anchorage in the concrete or tile.

Where steel beams or purlins are not more than 4 ft. center to center, hangers may be attached directly to them. When hangers are hung from concrete beams or arches, the hangers shall be placed before concrete is poured.

When ceilings are hung from terra cotta floors, hangers may be installed at tile joints during erection, or may be installed after tile is in place, holes bored clear through tile and secured on upper side by steel rod or toggle bolt.

(B2c) RUNNER CHANNELS—Runner Channels shall be placed not to exceed 4 ft. on centers, and shall be not less than 1½ in. weighing not less than 456 lb. per thousand lineal feet.

Lower end of wire hangers shall be secured to runner channels by three twists; lower end of rod hangers shall be secured to runner channels by two twists, or by wiring; lower end of flat steel hangers shall have holes punched at the proper distance to which the runner channels shall be bolted with not less than ⅜-in. diameter bolts.

Runner channels shall conform to the contour of the ceiling.

(B2d) FURRING CHANNELS—Furring Channels, spaced **[specify]** shall not be less than ¾ in. with a minimum weight of 276 lb. per thousand lineal feet; they shall be erected at right angles to the runner channels and shall be securely saddle tied to them by at least three strands of No. 16 galvanized annealed wire at each crossing, or by No. 9 wire hairpin clips.

NOTE—*Maximum spacing should be 12 and 13½ in. for 3.0 and 3.4 lb. flat lath; 12 in. for 2.75 lb.; 16 in. for 3.0 lb.; 19 in. for 3.4 lb. ⅛ in. Flat Rib Lath; 16 in. for 2.5 lb.; 24 in. for 3.0 lb.; 31½ in. for 3.4 lb. or 4.0 lb. ⅜ in. Rib Lath.*

(B3) METAL STUD PARTITIONS

(B3a) SOLID PARTITIONS—Metal studs for solid partitions shall be not less than ¾-in. cold or hot rolled channels weighing not less than 276 lb. per thousand lineal feet, and spacing of studs shall conform with the requirements for the weight of lath specified.

(B3b) HOLLOW PARTITIONS—Metal studs for hollow partitions shall be constructed of a double row of ¾-in. channels weighing not less than 276 lb. per thousand lineal feet and spacing of studs shall conform with the requirements for the weight of lath specified.

(B3c) GENERAL—

(B3c1) Studs shall be secured in position by inserting ends in holes punched ¾ in. in top of concrete or other masonry floors or in soffits of masonry ceilings, or by attaching to stud shoes, or by placing ends in holes drilled in wood floor bucks anchored to masonry floors at 4-ft. intervals.

(B3c2) Studs shall be secured on wood floors by wire tying to nails driven 1 in. into floors and projecting at least 1 in. above.

(B3c3) Where metal lath ceilings are used a small hole shall be made in the ceiling lath and the end of the channel allowed to project through it and be wired to a channel attached to the ceiling lath.

(B3c4) Splicing of studs shall be made by lapping channels not less than 8 in. with the flanges interlocked and tied.

(B3c5) Solid partitions over 6 ft. high shall be temporarily braced horizontally on the channel side at intervals not exceeding 6 ft. vertically before applying plaster. Such bracing shall not be removed until scratch coat on the lath side of the partition has set.

(B3c6) In every case one channel shall be set next to wood buck at each side of openings and double wired securely to 8d nails driven on each side of channel in pairs into buck at 2-ft. intervals. Bottom of door buck shall be securely spiked to wood plug in floor, or attached by metal anchors.

(B4) METAL WALL FURRING

Where so indicated on plans **[or listed in schedules]** exterior walls shall be furred with ¾-in. channels spaced **[specify]** on centers with flange to wall. Furring channels shall be substantially secured to floors and ceilings and shall be substantially secured to walls with special hook nails driven into the mortar joints. Provide rigid framing at all openings.

(B5) MISCELLANEOUS METAL FURRING

Provide ¾-in. channel furring for all **[false beams] [ornamental plaster cornices] [stair soffits] [specify]**, etc., as shown on the plans and as detailed. Furring shall be set **[specify]** o.c. and rigidly secured to the building construction.

(C) LATHING

(C1) MATERIALS

(C1a) WOOD LATH—No. 1 **[white pine] [cypress] [spruce]** free from knots, sap and bark.

(C1b) GYPSUM LATH—[Perforated] [Insulating] Rocklath ⅜ in. thick, 16 x 32 in. and 16 x 48 in.

NOTE—*For Rocklath, see pages 9 and 10.*

(C1c) INSULATING LATH—Weatherwood Insulating Lath **[½ in.] [1 in.]** thick, 18 x 48 in.

NOTE—*See USG Co.'s "Thermal Insulation" section for complete details and specifications.*

(C1d) METAL LATH—[Specify brand, material and finish] lath; —— lb. for horizontal positions and —— lb. for vertical positions.

NOTE—*See pages 12, 13 and 14. Select and specify weight for both horizontal and vertical positions.*

NOTE—*Minimum weights should be as follows:*

(a) Expanded Metal Lath—

(a1) ***(For vertical positions, partitions, etc., attached to metal supports)*** *12 and 13½ in. on center, lath shall weigh a minimum of 2.5 and 3.0 lb., respectively except for solid partitions where 2.2 lath may be used on 12 in. spacings and 3.4 lath on 16 in. spacing. For nailed-on partitions, maximum spacing shall be 16 in. for all flat laths, minimum weight to be 2.5 lb.*

(a2) ***(For tied-on ceilings attached to metal supports)*** *maximum spacing shall be 12 and 13½ in. for 3.0 and 3.4 lb. flat lath; for nailed-on ceilings maximum spacing shall be 16 in. for these laths.*

(b) ⅛ in. Flat Rib Lath—

(b1) ***(For nailed or tied-on partitions and furring)***
For supports spaced not to exceed 16 in. o.c. .....2.75 lb
For supports spaced not to exceed 19 in. o.c. .....3.0 lb.

(b2) ***(For nailed or tied-on ceilings)***
For supports spaced not to exceed 12 in. o.c.....2.75 lb.
For supports spaced not to exceed 16 in. o.c.....3.0 lb.
For supports spaced not to exceed 19 in. o.c.....3.4 lb.

(c) ⅜ in. Rib Lath—

(c1) ***(For nailed or tied-on partitions and furring)***
For supports spaced not to exceed 19 in. o.c.....2.5 lb.
For supports spaced not to exceed 24 in. o.c.....3.0 lb.
For supports spaced not to exceed 31½ in. o.c.....3.4 lb.

(c2) ***(For nailed or tied-on ceilings)***
For supports spaced not to exceed 19 in. o.c.....3.0 lb.
For supports spaced not to exceed 24 in. o.c.....3.4 lb.
For supports spaced not to exceed 31½ in. o.c.....4.0 lb.

(C1e) CORNERITE—Red Top Cornerite, 3 x 3 x 96 in. with special selvage edge.

(C2) APPLICATION of WOOD LATH

(C2a) All **[exterior stud walls] [wood furring] [interior stud partitions] [ceiling joists] [stair soffits] [specify]** shall be lathed with wood lath. Lath shall be spaced not less than ¼ in. nor more than ⅜ in. apart and shall be secured to each bearing with standard wood shingle nails, two (2) to each end and one (1) to intermediate bearings.

Lathing shall break joints every eight laths, all put on horizontally. Under no circumstances shall lathing stop and form a long, straight, vertical joint nor be put on vertically to finish out at angles or corners; neither shall any lath run through and behind studding from one room to another. All corners must be made solid before lath is applied.

(C2b) All re-entrant angles shall be reinforced over the wood lath with Cornerite. Strips shall butt (not lap) at ends and shall be substantially secured.

(C3) APPLICATION of ROCKLATH

All **[exterior stud walls] [wood furring] [interior stud partitions] [ceiling joists] [stair soffits] [furred or suspended ceiling] [specify]** shall be lathed with **[Rocklath] [Perforated Rocklath] [Insulating Rocklath].**

(C3a) Cutting shall be done by scoring with a sharp hatchet or knife and then breaking down and up over a straight edge.

Nails shall be 1⅛ in., 13 gauge, blued, 5/16 in. flat head, smooth diamond point.

Rocklath boards shall be applied with the long dimension at right angles to the framing members, butted, with broken joints in each course. Stagger joints between walls and ceilings so that the vertical joints on wall will not meet ceiling joints.

Fit Rocklath tight together at all re-entrant angles and corners. Cut accurately and fit Rocklath neatly around all electric outlet boxes, etc.

Space nails approximately 4 in. apart using 5 nails per stud. First nail ½ in. from edge, nailing to center support first, then outer edges. Each nailing edge must have a firm bearing on studs, joists and furring. Drive nails home.

(C3b) All re-entrant angles shall be reinforced over the Rocklath with Cornerite. Strips shall butt (not lap) at ends and shall be substantially secured.

(C4) APPLICATION of INSULATING LATH

NOTE—*See USG section on "Thermal Insulation" for complete specification data.*

(C5) APPLICATION of METAL LATH

(C5a) GENERAL—All **[specify location]** shall be lathed with metal lath.

(C5b) ATTACHMENT TO WOOD SUPPORTS—Metal lath shall be attached to wood studs and joists by not less than 4d and 6d nails, respectively, driven to a penetration of not less than ⅞ in. and 1 in., respectively, and spaced not to exceed 6 in. o.c. or by clips or devices with equivalent penetration and holding power. There shall be one tie on side laps, half way between supports.

(C5c) ATTACHMENT TO METAL SUPPORTS—Metal lath shall be wired to metal supports at intervals not exceeding 6 in., with not less than No. 18 gauge galvanized soft annealed wire and tie shall always occur where sides of sheets lap at channels. There shall be one tie on side laps half way between channels.

(C5d) ERECTION OF METAL LATH—

(C5d1) Metal lath shall be erected with the long dimensions of sheet across the supports.

(C5d2) Lath shall be first applied to the ceilings and the sheets carried down 6 in. onto the walls and partitions. If metal lath is not used on the ceilings, the lathing shall start at the top of the wall and be bent and carried up 6 in. onto the ceiling joists so that no joints occur at juncture of ceiling and walls; and on walls, all lath shall be started one framing member away from corner and bent into the corner and carried onto the abutting wall so as to avoid a joint at juncture of walls. Where ⅜-in. ribbed lath is used on ceilings or walls it shall be butted into all joints, and strips of flat lath shall be bent into the shape of an "L", 3 in. on each side, and securely wired along each edge in all corners. Strips shall not be fastened at the corner, but only along each edge of the sheet.

(C5d3) Lath shall be placed so that the lower sheet laps over the upper (not vice versa) and shall be securely attached to the supports. Fastenings shall be so placed that they shall occur where sides of sheets lap at supports.

(C5d4) Expanded metal lath shall be lapped at sides not less than ½ in. and at ends not less than 1 in. End laps shall occur only over supports.

(C5d5) Rib lath shall be lapped at sides by nesting outside ribs, and at ends, 1 in.

(D) PLASTERING ACCESSORIES

(D1) MATERIALS

(D1a) METAL PLASTER ARCHES—Red Top Metal Plaster Arches No. **[s] [specify].**

NOTE—*See page 16.*

(D1b) CORNER BEADS—Red Top Corner Bead No. **[specify].**

(D1c) BASE SCREEDS—Red Top Base Screed No. **[specify].**

(D1d) METAL PICTURE MOULD—Red Top Picture Mould No. **[specify].**

(D1e) METAL EXPANSION CASING—Red Top Metal Casing No. **[specify].**

(D2) APPLICATION of METAL PLASTER ARCHES

Secure metal plaster arches in position over the lath, set accurately in accordance with the details. Corner beads on vertical jambs shall join arch beads without break at the juncture.

(D3) APPLICATION of CORNER BEADS

All corners **[both vertical and horizontal]** shall be protected with corner beads for their full height **[or length].**

NOTE—*If there are exceptions, so note.*

Corner beads shall be rigidly and substantially secured, accurately set, plumb, true and straight.

(D4) APPLICATION of METAL BASE SCREEDS

The following rooms shall have base screeds:

NOTE—*List and locate here or in schedules on plans.*

Screeds shall be substantially secured, accurately set, straight and true to line and parallel with the finished floor line.

(D5) APPLICATION of METAL PICTURE MOULDS

The following rooms shall have metal picture moulds:

NOTE—*List and locate here or in schedules on plans.*

Picture moulds shall be substantially secured, accurately set, straight and true to line and parallel with the ceiling line.

(D6) APPLICATION of METAL EXPANSION CASINGS

The following openings shall have metal expansion casings:

NOTE—*List and locate here or in schedules on plans.*

Expansion casings shall be accurately set in line with jambs. Secure with screws, locking clips and stamped casing miters.

(E) PLASTERING · BASE COATS
(Scratch and Brown Coats—Two Coats)

(E1) MATERIALS and MIXING

NOTE—*See pages 4 and 5.*

NOTE—*Select type best adapted.*

(E1a) GENERAL—Store all plaster at the site in a dry place, raised above the bare ground.

Provide clean, water-tight mixing boxes (approximately 3½ x 7 ft. x 10 in. deep for base coats and 2½ x 4½ ft. x 10 in. deep for finish coats) raised 4 in. at one end. Clean mixing boxes after each mix. Machine mixing is permitted providing machine is kept clean and free from set plaster.

Keep tools clean. Do not rinse tools in mixing water.

Do not mix more material than can be applied in one (1) hour nor one mix with another. Never retemper plaster after it has commenced to set.

All material except sand shall be as manufactured by the United States Gypsum Company.

(E1b) WATER—Water shall be clean and free from impurities.

(E1c) SAND—Sand shall be clean, sharp and free from organic matter with grains graded from fine to coarse, meeting the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Screen through a 6-mesh screen.

(E1d) [Specify brand] CEMENT PLASTER (UNSANDED)—

(E1d1) For scratch coat on **[gypsum] [wood] [metal]** lath, mix two (2) parts by weight of dry sand with one (1) part of plaster.

(E1d2) For scratch coat on **[brick] [Pyrobar gypsum tile] [clay tile],** mix three (3) parts by weight of dry sand with one (1) part of plaster.

(E1d3) For second or brown coat, mix three (3) parts by weight of dry sand with one (1) part of plaster.

(E1d4) Do not mix sand and plaster until ready to add water.

(E1d5) First put in raised end of the mixing box a layer of sand, then one of plaster. Hoe dry from one end of box to other and then back again, working sand and plaster thoroughly together to a uniform color. Put water in the low end of box; hoe plaster into the water, mixing thoroughly.

(E1e) [Specify brand] WOOD FIBER PLASTER—

(E1e1) Use neat for scratch coat on **[gypsum] [wood] [metal]** lath.

(E1e2) For scratch coat on **[brick] [Pyrobar gypsum tile] [clay tile],** use **[neat] [or] [with not more than one (1) part of sand to one (1) part of plaster by weight].**

(E1e3) For second or brown coat, use **[neat] [or] [with not more than one (1) part of sand to one (1) part of plaster by weight].**

NOTE—*In (Ele2) and (Ele3) above, it is customary to use the "sanded mix". In some territories, due to sand conditions, the "neat" material is advocated. Consult the USG representative for best local practice.*

(E1e4) Put the plaster in upper end of mixing box and water in lower end. Hoe plaster into water and allow to soak from 10 to 15 minutes. Then mix to proper consistency.

(E1f) [Specify brand] PREPARED PLASTER (SANDED)—

(E1f1) Add nothing to the material but water.

(E1f2) Put the plaster in upper end of mixing box and water in lower end. Hoe plaster into water, mixing thoroughly to the proper consistency for application.

(E1g) BONDCRETE (FOR ALL CONCRETE SURFACES)—

(E1g1) For both scratch and brown coats.

(E1g2) Add nothing to the material but water.

(E1g3) Put the plaster in the upper end of mixing box and water in lower end. Hoe plaster into water. Allow the material to soak from 10 to 15 minutes and mix thoroughly.

(E2) APPLICATION of BASE COATS—GENERAL

Keep plaster from freezing for 24 hours after application.

In hot, dry weather screen all openings while plastering to prevent material from drying out before it has set. If plaster should dry out (showing soft, white spots or areas) sprinkle those portions so affected with clean water from a spray pump or a brush.

After plastering has set, open the windows and permit the wall to dry out as quickly as possible. Use judgment in procedure during freezing weather.

For grounds see "Grounds," par. (A13), page 27. Unless specially otherwise noted, all plaster shall be applied in three (3) coats—scratch, brown and finish. Scratch coat shall be applied and the surface well scratched. When scratch coat is set and nearly dry, follow with brown coat. Brown coat shall be brought to a true level plane with rod and darby flush with the grounds, ready to receive finish coat. Angles and corners shall be left straight, true and plumb.

(E3) APPLICATION • Cement and Prepared Plasters

(E3a) For best results over all bases, let scratch coat set before applying brown coat.

(E3b) ON WOOD LATH—Soak lath thoroughly the day before and again an hour or so before applying the plaster. Apply in two (2) coats, scratch and brown, the scratch with sufficient pressure to obtain a good key. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3c) ON GYPSUM LATH and FIBER INSULATING LATH—Do not wet lath. Apply in two (2) coats, scratch and brown. Scratch coat shall be well scratched in to fill all interstices between lath boards. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3d) ON METAL LATH—Apply in two (2) coats, scratch and brown. Scratch coat shall be applied lightly covering the lath and filling meshes. Scratch first coat and allow to set before applying brown coat. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3e) ON BRICK, PYROBAR GYPSUM TILE, OR CLAY TILE—[Soak brick or tile wall thoroughly.] [If necessary, sprinkle Pyrobar lightly to reduce suction.] Apply in two (2) coats, scratch and brown, and fill out to grounds. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E4) APPLICATION • Wood Fiber Plaster

NOTE—*Neat Wood Fiber Plaster may be troweled down to a smooth finish omitting further finish coat.*

(E4a) ON WOOD LATH—Soak lath. Apply in two (2) coats. Apply scratch coat with sufficient pressure to obtain a good key and scratch the surface. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4b) ON GYPSUM LATH AND FIBER INSULATING LATH—Do not wet lath. Apply in two (2) coats. Scratch coat shall be well scratched in to fill interstices between lath units. Scratch first coat and allow to set before applying brown coat. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4c) ON METAL LATH—Apply in two (2) coats. Scratch coat shall be applied a little stiff, covering lath and filling meshes. Scratch coat must be set before applying brown coat. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4d) ON BRICK, PYROBAR GYPSUM TILE, OR CLAY TILE—[Except over dampproof paint.] [Soak brick or tile walls thoroughly.] [If necessary, sprinkle Pyrobar lightly to reduce suction.] Apply in two (2) coats. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E5) APPLICATION • Bondcrete for Concrete

NOTE—*See paragraph (A12), page 27.*

NOTE—*Bondcrete may be troweled down to a smooth finish omitting further finish coat. If desired, so specify.*

(E5a) Apply in two (2) coats in just sufficient thickness to obtain an even surface (not to exceed ⅜ inch on ceilings and ⅝ inch on side walls). Before the plaster begins to set, broom the surface to receive the finish coat.

NOTE—*Use for all large areas of concrete.*

(F) PLASTERING · FINISH COATS

(F1) MATERIALS and MIXING

NOTE—*Select type best adapted.*

(F1a) GENERAL—Store all plaster at the site in a dry place, raised above the bare ground.

Provide clean, water-tight mixing boxes (approximately 3½ x 7 ft. x 10 in. deep for base coats and 2½ x 4½ ft. x 10 in. deep for finish coats) raised 4 in. at one end. Clean mixing boxes after each gauging. Machine mixing is permitted providing machine is kept clean and free from set plaster.

Keep tools clean. Do not rinse tools in gauging water.

Do not mix more material than can be applied in one (1) hour nor one gauging with another. Never retemper plaster after it has commenced to set.

All material except sand for job sanded sand float finish shall be as manufactured by the United States Gypsum Company.

(F1b) WATER—Water shall be clean, free from alkali and impurities.

(F1c) SAND—Sand shall be clean, sharp and free from organic matter with grains graded from fine to coarse, meeting the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Screen through a 6-mesh screen.

(F1d) [Specify brand] PREPARED GYPSUM FINISH—

NOTE—*See page 6.*

Put the finish in the upper end of mixing box and water in lower end. Hoe plaster into water (using approximately one (1) part of water to two (2) parts of plaster measured by volume). Allow the material to soak and draw in the water without hoeing for at least 20 minutes. When the material has soaked and shows no further signs of air bubbles, mix thoroughly and, with particular care, break down the mix to a smooth, even, creamy consistency. Bring the mix finally to a very thin consistency. Transport in buckets.

(F1e) [Specify brand] FINISHING LIME and [Specify brand] GAUGING PLASTER—

NOTE—*See page 7.*

(F1e1) ***(Preparing Hydrated Lime Putty)*** Fill water-tight box one-half to two-thirds full of clean water.

Add dry lime gradually, sifting through a ¼-in. mesh screen, until all water is dried up.

Allow lime to soak overnight to develop full plasticity.

Do not hoe or screen after soaking unless lime is dirty or lumpy.

(F1e2) ***(Preparing Quicklime Putty)*** Add water and lime gradually while mixing, constantly agitating the mixture to prevent burning of the unslaked portion. Mix to a thin consistency and screen. Run into ageing box.

(F1e3) Mix by measure one (1) part of dry gauging plaster with three (3) parts of lime putty, as follows:

For each 12-quart bucket (approximately 37 lb.) of lime putty, add 2 quarts of water in the ring on the board. Sift in enough dry gauging plaster to absorb the water; then blend plaster and lime putty together thoroughly.

NOTE—*The above proportions are equal to 1 part of dry gauging plaster to 2 parts of dry lime hydrate by weight.*

(F1f) [Specify brand] PREPARED GYPSUM SAND FLOAT FINISH—

NOTE—*See page 6.*

Put the finish in the upper end of mixing box and water in lower end. Hoe finish into water.

Allow the material to soak and draw in the water without hoeing for at least 10 minutes.

When the material has soaked and shows no further signs of air bubbles, mix thoroughly and, with particular care, break down the mix to a smooth, even, creamy consistency. Transport in buckets.

(F1g) [Specify brand] SAND FLOAT FINISH (JOB SANDED)—

NOTE—*See page 4.*

Screen sand through a No. 12 screen. Mix dry to a uniform color one (1) part of Cement Plaster to one (1) part of dry sand by weight (equal to from 4 to 6 shovels of sand to each 100-lb. bag). Put dry mix in upper end of box and water in lower end.

Hoe material into water and mix thoroughly to a smooth, creamy consistency. Keep tools and box clean.

(F1h) ORIENTAL INTERIOR (COLORED FLOAT OR TEXTURE FINISH)—

NOTE—*See page 6.*

(F1h1) Color **[s]** shall be **[specify] [as subsequently determined upon].**

(F1h2) Put the Oriental Interior in upper end of box and water in lower end. Hoe material into water, using approximately one (1) part of water to two (2) parts of Oriental Interior, by volume.

Let Oriental Interior soak overnight. After soaking, mix thoroughly and carefully hoe the mix to a smooth, creamy consistency. Transport in buckets.

(F1i) RED TOP KEENE'S CEMENT—

NOTE—*See page 8.*

NOTE—*For preparation of lime putty, see (F1e).*

(F1i1) [Box Mixed for Extremely Hard Trowel Finish]—Use Standard Keene's Cement neat. Add water only. Mix thoroughly and bring to a working consistency. Transport in buckets.

(F1i2) [Box Mixed for Hard Trowel Finish]—Use 25 lb. of lime putty to 100 lb. of Standard Keene's Cement. Add water only to the neat Keene's. Mix thoroughly and bring to a working consistency. Blend plaster and putty together thoroughly. Transport in buckets.

(F1i3) [Box Mixed for Medium Hard Trowel Finish]—Use 80 lb. of lime putty to 100 lb. of Standard Keene's Cement. Add water only to the neat Keene's. Mix thoroughly and bring to a working consistency. Blend plaster and putty together thoroughly. Transport in buckets.

(F1i4) [Board Mixed Quick Troweling Keene's]—Use not more than 60 lb. of lime putty to 100 lb. of Quick Troweling Keene's Cement. Place 2 ten-quart pails of lime putty in a ring on the board; add 4½ to 5 gallons of water; sift in 100 lb. of Quick Troweling Keene's Cement; allow to soak 15 minutes; blend plaster and putty together thoroughly. To assist in application over an extremely dry base, fine marble or white silica sand may be added in the proportion of 20 lb. to 100 lb. of Keene's Cement.

(F1i5) [Sand Float Finish]—Mix lime putty, clean sand, and Standard Keene's Cement in the proportions of 100 lb. of lime putty, 400 lb. of sand and 100 lb. of Keene's Cement. **(Add USG Limeproof Colors as subsequently selected.)**

(F2) APPLICATION OF FINISH COAT · GENERAL

Keep plaster from freezing for 24 hours after application.

Do not apply finish coat on a base coat which contains frost.

In hot, dry weather screen all openings while plastering to prevent material drying out before it has set. If plaster should dry out (showing soft, white spots) sprinkle portions so affected with clean water with a spray pump or brush.

After plastering has set, open the windows and permit the wall to dry out as quickly as possible. Use judgment in procedure during freezing weather.

Angles and corners shall be left straight, true and plumb.

(F3) APPLICATION • Trowel Finish

(F3a) LOCATION—The following shall receive trowel finish:

NOTE—*List and locate either in schedules on plans or here.*

(F3b) LIME AND GAUGING PLASTER—Apply in two (2) coats over a fairly dry gypsum plaster base. Scratch in a thin coat, then go over a second time filling imperfections and cat faces. Trowel to a smooth finish applying water with a damp brush. Troweling should be completed before the finish has set. In cold damp weather, provide heat and ventilation until the finish is dry.

(F3c). PREPARED GYPSUM FINISH—Base coat must be dry and roughened before finish is applied. If suction is too great, sprinkle lightly with clean water from a clean brush.

Apply in three (3) coats. The first time over, put on sufficient material to cover the surface completely, using material as thin as possible and grinding it thoroughly into the base coat. Allow this to draw a few moments to avoid blistering.

The second time over, lay the material on perfectly level.

The third time make the material as thin as can be handled on the hawk and fill in cat faces and imperfections. After it has drawn a few moments, trowel to a smooth surface, applying water with a damp brush. Do not drench with water (drenching will kill the face of the material). Work top and bottom of the wall at the same time to avoid joinings.

(F4) APPLICATION • Sand Float Finish

(F4a) LOCATION—The following shall receive sand float finish:

NOTE—*List and locate either in schedules on plans or here.*

(F4b) PREPARED SAND FLOAT FINISH OR CEMENT PLASTER SANDED—Apply sand float finish after base coat has set firm and hard, but while still green.

"Grind in" a thin coat first; then "come back" with the final coat, laying it on in an even surface. Then use a **[cork] [carpet]** or **[felt]** float, working the material to a true, even surface, free from float marks and cat faces.

NOTE—*Cork float preferred.*

Use as little water as possible while working, so as to avoid killing the surface. Use damp brush only. Do not attempt to work after the material begins to or has set.

Work top and bottom of the wall at the same time to avoid joinings.

(F5) APPLICATION • Oriental Interior (Colored Finish Coat)

(F5a) LOCATION—The following shall receive Oriental Interior Finish:

NOTE—*List and locate either in schedules on plans or here.*

(F5b) GENERAL—Brown coat should be broomed or left rough under darby to insure a good bond. Remove all loose or projecting particles from base coat which may show through finish coat.

Apply over a gypsum plaster base which has set firm and hard. On all types of masonry construction, such as gypsum tile, clay tile, etc., the plaster base must be thoroughly dry. On lathing bases, such as gypsum, fiber insulating, wood, or metal lath, Oriental Interior may be applied after the plaster base is 90% dry. If the suction in the base coat is too great to permit ease of application, wet down lightly and uniformly with clean water.

To avoid cutting re-entrant angles, use a trowel with edges rounded to a curve the circumference of a dime.

Use as little water as possible while working, so as to avoid killing the surface. Use damp brush only. Do not attempt to work material after it begins to or has set.

Work top and bottom of wall at same time to avoid joinings.

Proper drying conditions must be maintained in order to protect the color. During the late fall, winter and early spring months, the slow-drying periods of the year, artificial heat and proper ventilation must be arranged for. Failure to provide this protection may result in color difficulties.

(F5c) FLOAT FINISH—Apply in two (2) coats. First apply a thin coat, grinding this into base, thoroughly covering the surface, and allow to draw a few moments. The second time over, lay the material on perfectly level and then use a **[cork] [carpet]** or **[felt]** float, working the material to a true, even surface, free from float marks and cat faces.

NOTE—*Cork float preferred.*

(F5d) TEXTURE FINISH—Apply in two (2) coats. First apply a thin coat, grinding this into base, thoroughly covering the surface, and allow to draw a few moments. The second time over, lay the material on perfectly level, working it into the desired texture.

NOTE—*The* United States Gypsum Company *will furnish on application a Special Bulletin covering the execution of textured finishes.*

(F5e) TILE OR MASONRY EFFECTS—Mark off with a straight-edge while the material is "green"—preferably from 4 to 5 hours after application. Units shall be rectangular and joints shall be clean cut and even.

(F6) APPLICATION • Keene's Cement Finish

(F6a) LOCATION—The following shall receive Keene's Cement Finish:

NOTE—*List and locate either in schedules on plans or here.*

(F6b) GENERAL—TROWEL FINISH—Apply in two (2) coats over a dry gypsum plaster base. Scratch in a thin coat well ground into the base; then apply a second coat filling imperfections. Trowel to a smooth finish, applying water with a damp brush. Complete troweling before finish has set.

(F6c) PANELS—Keene's Cement wainscots shall be divided into even vertical panels with V-joints while the material is "green"—preferably from 4 to 5 hours after application. First rake out plaster base at joints for a depth of ¼ and ½ in. wide, laid to a straightedge, plumb and true—clean of loose particles. Apply Keene's Cement as above and form clean cut, even vertical V-joints at panel divisions.

(F6d) TILE EFFECTS—Mark off with a straightedge while the material is "green"—preferably from 4 to 5 hours after application. Units shall be rectangular and joints shall be clean cut and even.

(F6e) POLISHED SURFACES—After the cement is dry, polish with a cloth to a highly polished surface.

(F6f) SAND FINISH—Apply in two (2) coats over a fairly dry gypsum plaster base, scratching in a thin coat and doubling back with the second coat. Finish to desired texture, using water sparingly.

United States U.S. Gypsum Company

(G) ORNAMENTAL PLASTER WORK

(G1) LOCATION

The following rooms require ornamental plaster in accordance with details.

NOTE—*List and locate either in schedules on plans or here.*

(G2) MODELS

(G2a) All ornamental work shall be executed from models.

(G2b) Models shall be furnished at the contractor's expense for all ornamental work. These shall be made by a skilled modeler **[selected] [approved]** by the architect, preferably in **[name place]** so that they may be under the direct supervision of the architect while being prepared. Models must be submitted for approval while in the clay.

(G2c) The contractor shall allow the sum of **[specify]** to cover the cost of models prepared under the direction of the architect, delivered f.o.b. cars **[specify].**

(G2d) The owner will furnish, without cost to the contractor, models prepared under the direction of the architect, delivered f.o.b. cars **[specify].**

(G3) MATERIALS and MIXING

NOTE—*See page 8.*

(G3a) [*For Run Work*] [specify brand] GAUGING PLASTER.

Add 50% lime putty to the gauging plaster to give the added plasticity required for run work. Mix thoroughly and bring to a working consistency.

(G3b) [*For Cast Work*] [specify brand] MOULDING PLASTER.

Add water only; mix thoroughly and bring to the proper pouring consistency.

NOTE—*See also Keene's Casting, page 8.*

(G4) APPLICATION • GENERAL

(G4a) All curved work shall be **[run] [or] [cast]** to true radial lines.

(G4b) Leave all ornamental plaster work in perfect condition for decorating, true and smooth, with surfaces and intersections rubbed down with fine sandpaper, if necessary.

(G5) RUN WORK

Furnish clean cut, accurate templates made in strict accordance with the architect's **[full size]** details.

Run all mouldings true with perfect arrises and miters.

(G6) CAST WORK

Ornamental work shall be cast hollow or solid as best suited to conditions, thoroughly strengthened with fiber and braced where necessary.

All cast work shall be set accurately—true, plumb and straight.

If necessary, members shall be substantially fastened around furring; where nails are used, they shall be galvanized.

Rigid Laboratory Research and Control assure uniform performance in both workability and Finished Plaster

ORIENTAL EXTERIOR STUCCO

Base Coats and Colored Finish Coats

• • •

DESCRIPTION—Oriental Exterior Stucco is a completely factory-mixed exterior stucco material of the highest quality. The finish coat is scientifically colored in a wide range of tints. It is the product of careful and thorough investigation and research by the United States Gypsum Company.

The chief limitation of stucco heretofore has been the difficulty of producing the desired texture and color to harmonize with the architectural design when the color has to be mixed in on the job, or of matching a certain color when the batches are mixed at different times or under different conditions.

Oriental Exterior Stucco is scientifically compounded and is water-resistive, non-staining, plastic, easy to apply, and permanent. Its use eliminates much of the uncertainty and defects inherent in both quality and appearance in the usual job-mixed stucco work.

Bases—Oriental Exterior Stucco should be applied over stucco mesh weighing not less than 1.8 lb. per sq. yd. or self-furring diamond mesh metal lath weighing not less than 3.4 lb. per sq. yd.

Oriental Exterior Stucco reinforced with steel mesh is adaptable for new buildings and for overcoating old stucco walls, masonry and concrete surfaces, and walls of wood siding or shingles. On new construction the recommended sheathing is Gyplap, The Fireproof Sheating. (See Index.)

Base Coat—Oriental Exterior Stucco Base Coat is a specially prepared, factory-mixed, permanent, water-resistive base for Oriental Exterior Stucco Finish, with the correct proportion of uniformly graded, selected sand, and other ingredients added to make it plastic.

Factory mixing prevents oversanding or improper proportioning of other ingredients on the job. Its uniformity assures perfect joinings of various mixes that will not show through the delicate coloring of the finish coat.

Being made ready for use by the addition of water only, it is economical of time and labor and assures a base of uniform suction and strength.

Finish Coat—Oriental Exterior Stucco Finish is mixed with mineral colors and prepared ingredients that make it water-resistive. The formula used is based upon methods used in producing the famous Old World stuccoes and one successfully used in America for 25 years.

Oriental Exterior Stucco Finish is furnished in white and eleven standard colors. All ingredients, including the mineral colors, are weighed and the charge thoroughly machine mixed. Water only needs to be added at the job. A uniform color and correct mixture are thus assured, entirely eliminating the unavoidable variations which occur when stucco is hand-mixed on the job.

CHARACTERISTICS—Oriental Exterior Finish sets slowly enough to permit proper finishing, thus avoiding unsightly streaks or shading.

Proper manipulation by the workman will produce in Oriental Exterior Stucco the beautiful texture and color effects that mark the finest of both Old World and modern stucco work. Besides the period textures, it is easy to achieve the smooth trowel, stipple, sponge, rough cast or spatter-dash finishes.

Oriental Stucco Finish increases in hardness, strength and water resistive qualities with age.

USE—Use for base and finish coats of exterior white or colored stucco of the highest quality.

NOTE—*Oriental Exterior Stucco Finish may be applied over standard portland cement base coats.*

PACKAGE—Oriental Exterior Base Coat is shipped in 100-lb. paper bags, and Oriental Exterior Finish Coat is shipped in 100-lb. paper bags. Order Finish Coat by the number on color cards or samples.

COVERING CAPACITY—

NOTE—*See "Covering Capacity," page 3.*

Base Coat—The approximate covering capacity of one ton of Oriental Exterior Stucco Base Coat (scratch and brown coats) on the basis of the average job, is as follows:

Plastering surface	Brick and clay tile	Metal lath	Wire fabric	Cement and cinder tile	Concrete
Sq. yd. per ton	20 to 25	25 to 30	22 to 28	20 to 22	20 to 25

Finish Coat—One ton of Oriental Exterior Stucco Finish, not to exceed ¼ in. in thickness, will cover from 150 to 200 sq. yds., depending on the texture selected.

United States USG Gypsum Company

Master Specifications

ORIENTAL EXTERIOR STUCCO

NOTE—*Notes are exp.anatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

The following surfaces shall be finished with Oriental Exterior Stucco:

NOTE—*Here list and locate all work included under this contract, together with the description of texture and color selected. If more than one texture or color is used on the work, list, locate and describe separately.*

(2) EXAMINATION

This contractor shall examine all base surfaces to receive stucco and shall report to the architect in writing any defects which will detrimentally affect the work under this contract. Commencement of work under this contract, without such notice, will be construed as acceptance of the base surfaces, and full responsibility for the final condition of the finished work.

(3) SAMPLE PANELS

The contractor shall furnish on the site, where directed, three (3) sample panels one (1) square yard in area for the approval of the architect. Panels shall be executed on the base specified and in accordance with the architect's selection of textures and colors. The stucco work shall be finished in accordance with the approved panel or panels.

(4) GENERAL

All materials shall be as manufactured by the United States Gypsum Company. All work shall be performed by skilled workmen.

(5) MATERIALS

(5a) Red Top Expanded Metal Stucco Mesh—1½-in. mesh, painted; weight **[1.8] [3.6]** lb. per sq. yd. Nails shall be Red Top Furring Nails.

(5b) Red Top Self-Furring Diamond Mesh Lath—(Galvanized) (Copper bearing steel, painted) (Pure iron, painted); weight 3.4 lb. Nails shall be 6d galvanized.

NOTE—*Select either for frame construction as desired. Where Gyplap as recommended is used as a non-shrinking, fire-resisting sheathing use clause 5b.*

(5c) Base Coat—Oriental Exterior Stucco Base Coat.

(5d) Finish Coat—Oriental Exterior Stucco Finish, color **No. (specify).**

(6) LATHING

NOTE—*Include only for frame construction.*

(6a) Expanded Metal—Apply the expanded metal across the studs. Secure with self-furring nails in accordance with the manufacturer's directions approximately 6 in. apart on studs. Lap pieces of expanded metal 1 in. Carry metal around all corners to the first support. Thoroughly secure the metal at all openings.

(6b) Diamond Mesh Lath—Apply the Self-Furring Diamond Mesh Lath across the studs. Lap lath ½ in. on sides and 1 in. on ends. Carry metal around all corners to the first support. Secure with 6d galvanized nails not more than 16 in. on centers horizontally and 6 in. on centers vertically. Drive nails well in and bend to engage at least two lath strands.

(7) MIXING AND APPLICATION OF STUCCO

(7a) General—

(1) Use a clean, tight mixing box, about 3½x7 ft., raised about 4 in. at one end. Mix with a hoe. Clean the mixing box after each gauging.

(2) Use only clean water, free from alkali and impurities; keep tools clean. Do not rinse tools in gauging water.

(3) Do not mix more material than can be applied in about one hour.

(4) Do not mix one gauging with another and do not retemper stucco after it has commenced to set.

(5) Do not apply during freezing, cold or wet weather, nor when rainstorms threaten.

NOTE—*Freezing will cause disintegration as well as color difficulty. Slow or sluggish drying or a rainstorm before hardening takes place, generally results in cloudy effects and color distortion. Careful treatment of this phase of stucco work is the greatest guarantee of uniformity in color. The material should not be applied to greasy surfaces. Integral waterproofing or anti-freeze solutions should not be used.*

(6) Keep stucco in a dry place. Do not store on ground.

(7b) Base Coats—Add only clean water to Oriental Exterior Stucco Base Coat and mix to the proper consistency. Apply in two coats. The first coat shall be ⅜ in. to ½ in. thick, scratched. After from 3 to 5 days apply the second coat not less than ⅜ in. thick properly rodded and floated to a true plane. Rake or thoroughly scratch each coat to provide a key for the succeeding coat. Allow second coat to cure from 7 to 10 days. In hot weather, wet down each coat daily.

(7c) Finish Coat—Add only clean water to Oriental Exterior Stucco Finish and mix to the proper consistency. Allow finish coat to soak from 20 to 30 minutes. After the base coats are completely dry, spray wall sufficiently to cut suction (avoid drowning surface). Apply finish coat not less than ⅛ in. or more than ¼ in. thick, as required for the finish selected.

The finish shall be:

NOTE—*Here specify or describe the finish selected. USG Bulletin OS-3 describes in detail the methods used to obtain various textures.*

WALLBOARDS

• • •

SHEETROCK

The Fireproof Wallboard

• • •

DESCRIPTION • TYPES and SIZES • USES

GENERAL—Sheetrock* is a fireproof wallboard. It is made of gypsum, moulded while in a plastic condition between two sheets of tough protective paper. In the finished product the gypsum has recrystallized and the board is strong, lasting, tough, durable and slightly flexible. The long edges are reinforced and protected by the same material with which the board is sheathed. These patented edges are square, uniform and true. The Sheetrock Joint Treatments described on the following page provide a uniform, strong, jointless surface ideal for any finish.

TYPES and SIZES—

Standard Sheetrock—Sheetrock with square edge is made ¼-in., ⅜-in. and ½-in. thick; 32 and 48 in. wide and 4, 5, 6, 7, 8, 9, 10, 11 and 12 ft. long. The widths fit standard 16-in. centering of studding and joists and the lengths readily adapt it to average ceiling heights.

Recessed-Edge Sheetrock—Recessed-Edge Sheetrock is the United States Gypsum Company's latest improvement in gypsum wallboard. This product is like square edge sheetrock, except that the long edges of the face side of the board are depressed. This depression forms a shallow channel when boards are erected, in which joint treatment is applied (see page 38). The resulting wall is one of tremendous strength, with joints reinforced and hidden, all within the thickness of the board itself. Perf-A-Tape Joint System has been especially developed for use with Recessed-Edge Sheetrock. The combination makes possible wallboard walls of unusual strength and smoothness.

*Registered Trade-Mark

Other Standard USG Joint Treatments may also be used with Recessed-Edge Sheetrock.

Recessed-Edge Sheetrock is made ½ inch thick, 48 inches wide, 4, 5, 6, 7, 8, 9, 10, 11, and 12 feet long. It can be applied with length at right angles to the framing members, thus strengthening the structure and reducing the number of joints; or it can be used vertically. Also made in ⅜ inch thickness.

THE SURFACE—Sheetrock has a close-grained, highly calendered surface of ivory color. It is tough and resistant to abrasion. Light colored paints retain their freshness and clarity. All paints spread farther.

THE CORE—The cellular core makes new improved Sheetrock more insulating. It also increases flexibility, reducing the chance of breakage in transport and application.

THE NAILING EDGES—Nailing edges on the standard ¼-in., ⅜-in. and ½-in. Sheetrock are square and uniformly thick. The paper enveloping the core has been chamfered so that the reinforced edges are of precisely the same thickness as the rest of the board, thus eliminating bowing in the piles. Panels join evenly and smoothly.

MARKING—On the edge of each sheet will be found a distinctive marking.

USES—Sheetrock is used for walls and ceilings in buildings of all types; building new rooms in old buildings; lining garages and attics; fireproofing over heating plants; factory dry rooms; remodeling work. It permits rapid erection without inconvenience to tenants.

Sheetrock walls take all types of painting and decorating, including wall paper.

ADVANTAGES OF SHEETROCK

FIREPROOF—Does not burn or readily transmit heat. It interposes a continuous fireproof sheet of substantial thickness over the wood frame construction.

PERMANENT—Does not disintegrate.

NO EXPANSION OR CONTRACTION — Does not warp, shrink or crack, because it is unaffected by climatic conditions.

SUBSTANTIAL THICKNESS—The standard ⅜-in. thick sheet is almost twice as thick as ordinary fiber wallboard.

STRONG, CLOSE LONGITUDINAL JOINTS — The boards fit close and even. The tough paper covering of Sheetrock is folded square over the longitudinal edges, forming a patented feature which insures an extra strong nailing edge and tight, flush joints. When finished with a standard USG Joint System, the joints are permanently hidden and are not apparent even under wallpaper.

SOUND AND HEAT INSULATION—Its greater thickness and permanently tight joints increase its insulating qualities materially over those of ordinary wallboard.

It is a non-conductor of sound to a surprising degree.

EASY TO INSTALL—It is sufficiently light in weight for easy rapid handling. The tough sheets can be sawed and nailed like lumber.

SHEETROCK JOINT TREATMENTS

GENERAL—The United States Gypsum Company has developed three systems of joint reinforcement, which add permanent armored joint concealment to the other advantages of Sheetrock. The joinings between the boards are "laced" by a reinforcing member embedded in a perfected joint cement of unusual strength and adhesiveness. This assures permanent concealment of board joinings and lessens the possibility of joint cracks showing through the decoration.

SHEETROCK PERF-A-TAPE* JOINT SYSTEM—Designed especially for use with Recessed-Edge Sheetrock, this patented joint system makes possible the smoothest and strongest type of wallboard joint—a joint that is easy to make and is unusually low in cost. It consists of specially fabricated, beveled, and perforated fiber tape $2\frac{3}{16}$ inches wide and special cement. It comes conveniently packed in a box containing a 250-foot roll of Perf-A-Tape and a bag of cement sufficient to treat the joints on 500 to 650 sq. ft. of board surface. Complete application directions come with each package.

Numerous laboratory tests and actual use on thousands of homes prove that Perf-A-Tape Joint System is the ideal joint treatment for Sheetrock, the Fireproof Wallboard.

SHEETROCK METAL "A"* JOINT SYSTEM—A patented system similar to Perf-A-Tape Joint System, except that 1⅞ in. wide metal perforated tape is used in place of perforated fiber tape.

SHEETROCK REINFORCED JOINT SYSTEM—This system uses a specially woven and processed cloth fabric 2 inches wide and special cement. Packed as above described for Perf-A-Tape Joint System.

SHEETROCK FINISHER—Sheetrock Finisher is a specially prepared material, far superior to so-called joint fillers, with none of the disadvantages of the old type of plaster filler. When mixed with water, Sheetrock Finisher forms a cement, which is easily, quickly and economically applied with a semiflexible scraping knife. It is used to conceal joints, spot nailheads and repair surface abrasions. Supplied in 5, 10 and 25-lb. packages. 5 lb. should finish joints and cover nailheads for 500 to 650 sq. ft. of Sheetrock.

"Buttering"—Working the Cement Into the Joint

Applying Reinforcing Over "Buttered" Joint

Forcing Cement Through Reinforcing—Leveling Surface

Sanding Joint to Remove Any Rough Spots

*Trade-Mark

Master Specifications

APPLICATION OF SHEETROCK

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold face type are selective.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Sheetrock.*

(2) FRAMING

All studding and joists shall be spaced 16 in. on center. Framing in general shall be standard as provided for the application of wood lath.

Provide 2 x 4-in. headers on ceilings to take all end joints of Sheetrock and where required to form nailing base for wood beams, cornices, etc. Cut in 2 x 4-in. headers on walls to form substantial nailing for baseboards, wainscot caps and similar interior woodwork trim.

(3) MATERIALS

(3a) WALLBOARD—Sheetrock as manufactured by the United States Gypsum Company.

(3a1) Standard Sheetrock—[¼-in.] [⅜-in.] [½-in.] thick. Lengths shall be full height from floor to ceiling on walls and to fit paneling or headers of ceiling.

(3a2) Recessed-Edge Sheetrock Applied Vertically—⅜ in. thick. Lengths shall be full height from floor to ceiling on walls and to fit paneling or headers of ceiling.

(3a3) Recessed-Edge Sheetrock Applied Horizontally—½ in. thick. Lengths shall be such as will make possible the minimum number of joints.

(3b) NAILS—

(3b1) Cement coated common nails (flat head), **[3d for ¼ and ⅜ in.] [5d for ½ in.]** thick Sheetrock.

(3b2) Over old plaster, 6d cement coated common nails (flat head) for **[¼ in.] [⅜ in.] [½ in.]** Sheetrock.

(3b3) On buildings of two or more stories with a floor above Sheetrock ceiling, cement coated common nails (flat head), **[4d for ¼ in. and ⅜ in.] [5d for ½ in.]** thick Sheetrock.

(3c) JOINT TREATMENT—

(3c1) Sheetrock Perf-A-Tape Joint System.
(3c2) Sheetrock Metal "A" Joint System.
(3c3) Sheetrock Reinforced Joint System.
(3c4) Sheetrock Finisher (cement).

(4) PREPARATION OF SHEETROCK

(4a) PILING—Pile flat on floor in center of room, back of board up, except first board. Protect edges.

NOTE—*Doors and windows should be in place before board is delivered on job.*

(4b) HANDLING—Always handle Sheetrock in a vertical position on its longitudinal edge.

(4c) SAWING—Place back of board down and use a sharp hand saw. Support board close to sawing edge. Cuts that are covered with trim may be made with a knife or chisel and a straightedge. Immediately after a cut is made, bevel the cut edges on the face side with coarse sandpaper. Also bevel all mill-cut ends before the board is nailed in place. In no case leave loose paper on cut edges unless they are to be covered with wood trim. Recut the mill ends of any boards that have been made imperfect by handling.

(5) APPLYING SHEETROCK

(5a) GENERAL—All ends and edges shall be perfect. All exposed ends shall be face-beveled. All board shall butt tight along the covered edges and shall be left open ⅛ in. at all abutting cut ends (do not force mill-cut or sawed ends together).

(5a1) Standard Sheetrock shall be applied with the length parallel with framing members.

(5a2) Recessed-Edge Sheetrock (⅜ in. thick) shall be applied with the length parallel with framing members.

(5a3) Recessed-Edge Sheetrock (½ in. thick) shall be applied **[parallel with] [at right angles to]** framing members.

(5b) CEILINGS—Erect ceilings first. Apply **[½ in. Recessed-Edge]** Sheetrock **[parallel with] [at right angles to]** joists. Tack a strip of wood along the top of studs ½ in. from ceiling joist. Then raise Sheetrock, resting one end on the strip, and place a tee (made of 1 x 2-in.) under the board about one-third the distance from the opposite end to hold Sheetrock in position while nailing. When cross joints are necessary they shall be broken except when the joints are to be covered with wood panel strips or beams.

(5c) WALLS—Apply **[½ in. Recessed-Edge]** Sheetrock full length **[vertically] [at right angles to framing].** Edges shall fit tightly against ceiling boards. Scribe and saw to fit if necessary. Square the first board with adjacent walls. Break joints on partitions (on opposite sides of partitions perpendicular joints shall not come on the same stud). Break all joints—that is, stagger boards so that the corners of any four boards do not meet at one point.

NOTE—*When board is to be applied parallel with framing members, specify clause (5c1) below. When board is to be applied at right angles to framing members, specify clause (5c2) below.*

(5c1) Apply board above or below openings so that joints come at the center portions of the openings rather than at corners of openings.

(5c2) Span the top and bottom of all openings with full size boards.

(5d) NAILING—Drive nails "home", straight in, with heads slightly below surface; do not use a nail set. First drive nails at the edge adjoining board last applied. Nail to the first intermediate stud or joist; nail to the second intermediate stud or joist; finally nail remaining sides or ends. Do not stagger nails on joining edges. If there is a slight bow, set several nails in the board along the nearest support, pushing the board tightly against the support and driving the nails home.

NOTE—*For spacing of nails when sheetrock is applied parallel to framing members, specify clause (5d1) below. When ½-in. Recessed-Edge Sheetrock is applied horizontally to framing members, specify clause (5d2) below.*

(5d1) On intermediate supports, space nails 6 in. apart on ceilings and 9 in. apart on walls. At all sides and ends, space nails 3 in. apart ⅜ in. from edge.

(5d2) Space all nails 4 in. apart on all supports.

(6) APPLYING JOINT TREATMENTS

NOTE—*Complete direction sheet is included in each package containing roll of reinforcing tape and bag of cement.*

(6a) CAUTION—Do not mix more cement than can be used in one day. Mixed cement must not be allowed to stand over night. Never add any foreign material to the cement.

(6b) Into a metal receptacle containing the prescribed quantity of water (see direction sheet), gradually add the contents of the large bag of powdered cement and while adding, mix thoroughly to a consistency thinner than putty (in cold weather take the chill from the water). Be sure the entire batch is plastic and completely mixed, and sufficiently pliable to work through the weave of the reinforcing to insure a uniformly good bond. Place a wet cloth over the material and let stand for one hour before using.

(6c) After the mixed cement has stood for one hour it is ready for use. If too thin, add some dry joint cement.

(6d) Where any joinings between Sheetrock boards are open more than ⅛ in. because of careless application, first fill them level to surface of board with Sheetrock Finisher. After the Sheetrock Finisher is completely "set" and dry, the joint shall then be treated with the reinforcement and cement.

(6e) Cut [Perf-A-Tape] [Metal "A" tape] [Fabric] Reinforcing into proper lengths to correspond to the joints; or cut off a strip as the workman begins to treat each joint.

(6f) With a semi-elastic broad knife, liberally "butter" the joint with the plastic cement, working cement well into the joints and immediately place a strip of **[Perf-A-Tape] [Metal "A" tape] [Fabric]** Reinforcing over this cement, pressing down evenly. Then draw broad knife firmly over reinforcing, exerting pressure enough to force cement through the **[perforations] [fabric mesh].**

Remove excess cement leaving a thin covering over the reinforcing and at the same time level the surface on each edge of reinforcing. Caution: Be sure to work the cement well through **[perforations] [fabric mesh]** and see that cement covers tape.

When dry, sand lightly and feather edges with a thinner coat of cement.

(6g) If a good, level and uniform job has not been secured with this single application, the joint, when dry, shall be gone over again with cement to properly prepare it. Sand smooth if required.

NOTE—*Where decoration over reinforced joint is to be paint or wallpaper, more care must be taken to make a smooth, even job. A second application is often required. Joints and nailheads should be carefully sandpapered after the cement is dry, since even slight imperfections may show distinctly. Sheetrock Finisher can be used for the second application, as it produces a smooth finish for concealment.*

(6h) Spot all intermediate nailheads with cement.

DECORATING SHEETROCK

GENERAL—Sheetrock can be painted, calcimined, wallpapered, enameled or covered with lining cloth or paper, either with or without panels. It can also be decorated with Textone Plastic Paint or Texolite. Always conceal joints and nailheads by means of a Sheetrock Joint Treatment or with Sheetrock Finisher.

WALLPAPER—Before hanging wallpaper or wall fabric, apply a varnish size to facilitate their removal when redecorating.

PAINTING—See that the surface of Sheetrock is absolutely clean, dry and free from dust. Use USG K-Cemo* Primer for size coat. Before priming surface, apply a coat of primer over joints and nailheads and stipple with a stubby brush. When dry, apply a coat of primer uniformly and carefully over surface. Let priming coat dry, then touch up any "flat spots" and let dry before applying the first coat of paint.

TEXTONE-TEXOLITE DECORATION—Particularly suited for decorating Sheetrock is USG's New Method of Decoration, using Textone* for Texture and Texolite* for Color. With this method, the fine, subtle, colorful texture effects so much in demand today can be obtained at lower costs than ever before possible. A brief description of the method discloses why this is so.

First, white Textone (plastic paint) is applied thinly over the surface of Sheetrock. Then the desired texture effect is worked into this coat of Textone. Third, Texolite (casein wall paint) in the desired color is applied over the Textone. The reduction in cost is possible due to the more economical use of Textone to give much greater coverage per pound of material and from the excellent hiding power and bond of Texolite.

For flat wall decoration, Texolite is both effective and economical. It provides exceptional brilliance, non-fading color, better coverage, and one-hour drying.

CALCIMINE—Before calcimining apply a varnish size, following same method of first brushing joints and nailheads as for painting.

Textone being applied over Recessed-Edge Sheetrock —Perf-A-Tape wall. Insert shows how fine Colonial stippled effect is obtained.

The finished job—walls of Recessed-Edge Sheetrock, joints reinforced and hidden with Perf-A-Tape, decorated with Textone and Texolite.

*Registered Trade-Mark

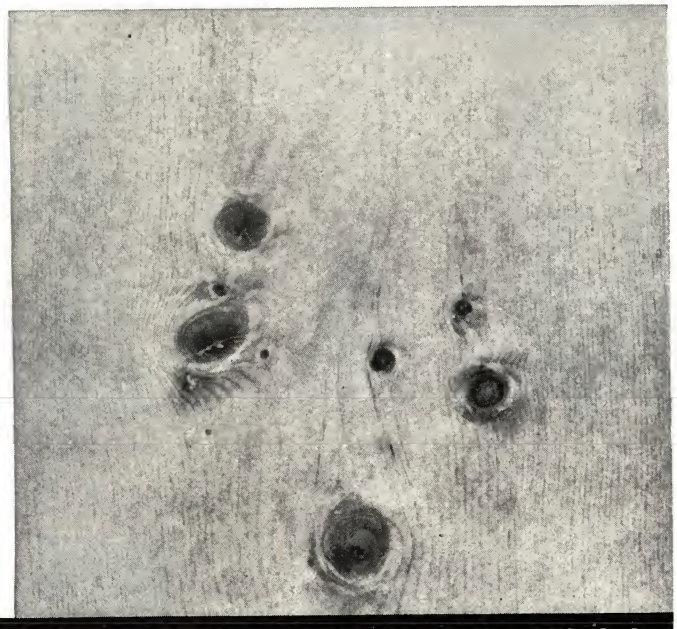
WOOD GRAINED SHEETROCK*

Reproductions of Actual Wood

DESCRIPTION—Wood Grained Sheetrock (a new type of Wallboard) now makes it possible to have the beauty of wood-paneled interiors at wallboard costs. The face surface of this new board so closely resembles wood that it is not easily distinguishable from the actual material itself. It is a reproduction by engraving and printing processes of the graining and color of a genuine wood surface, specially selected for beauty.

LIGHT AND DARK WOODS—Wood Grained Sheetrock is made in four finishes; walnut panels with a repeating pattern that can be matched, plain walnut with a continuous grain pattern, knotty pine and Douglas fir. This choice affords a light, a dark and a medium toned finish, the three groups into which all decorative woods are classified. The surfaces are true reproductions of the woods themselves.

SHEETROCK . . . *In Douglas Fir Finish*



SHEETROCK . . . *In Knotty Pine Finish*

SHEETROCK . . . *In Walnut Finish*

SHEETROCK . . . *In Matched Walnut Finish*

*Registered Trade-Mark

United States Gypsum Company

TYPICAL INSTALLATIONS OF WOOD GRAINED SHEETROCK

The same office before and after finishing with Walnut Wood Grained Sheetrock

Wood Grained Finishes of Sheetrock realistically reproduce wood. This is Douglas Fir

Knotty Pine Sheetrock used for walls, ceilings, doors, mouldings, beams, and pilasters

Modern living room and library having Sheetrock walls in Walnut Wood Grained Finish

(Wood Grained Sheetrock Continued)

ALL THE ADVANTAGES OF SHEETROCK — Like Sheetrock with the ivory finish, Wood Grained Sheetrock is fireproof, non-warping, strong, durable, and easy to handle and erect. It has a tough gypsum core that grips nails tightly with the same tough fiber covering that is largely responsible for Sheetrock strength.

Wood Grained Sheetrock stays in place wherever it is nailed, little affected by moisture or temperature changes. This is a distinct advantage in favor of this type of paneling because it avoids the possibility of panels pulling away from mouldings to leave an undecorated margin showing.

WALLBOARD SIZES—The matched walnut panels are made 4 ft. wide and in lengths of 8 and 9 ft. only. The standard walnut, Douglas fir, and knotty pine boards are 4 ft. wide and from 6 to 10 ft. long. Boards are 3/8 in. thick, with the exception of Douglas fir which is furnished in both 1/4 and 3/8 in. thicknesses.

It is easily cut and fitted into place. It can be cut in the same way that Sheetrock with the ivory finish is cut, either by sawing or by scoring from the face side and breaking.

MANY USES—The use of Wood Grained Sheetrock extends to all interior construction that is adapted to wallboard treatment. It is used for wood-paneled effects in residences, stores, shops, offices, display rooms, restaurants, tea rooms, hotel lobbies, apartments, dentists' and physicians' offices, club rooms, and for window display backgrounds.

EASY TO ERECT—The method of erection is similar to the erection of Sheetrock where it is used with mouldings or panel strips.

Boards are nailed in place and joints are covered with decorative mouldings—just the same as if the panels were made of wood veneer.

Other mouldings are used as needed to create panel designs.

For intermediate nailing, use 4d finishing nails driven at a 45-degree angle. Nail heads may be concealed with linseed oil putty mixed with stain to match the surface, or stick shellac of the correct color may be used.

Directions will be found on each panel of Wood Grained Sheetrock.

FINISH—VARNISH, SHELLAC, OR WAX—In the manufacturing process the Wood Grained Sheetrock is treated with two lacquer coats to preserve the surface and bring out the wood pattern and coloring. The result is a durable, lasting surface.

If further finish is desired, this can be accomplished by first giving the surface a coat of white shellac (clear) followed, when dry, with one or more coats of varnish (light colored), lacquer, or wax. (Be sure shellac and not varnish is used for first coat.)

SHEETROCK PANELWOOD*

A Genuine Wood Veneer

DESCRIPTION—Selected cabinet woods are applied to the face of special, dense improved Sheetrock (The Fireproof Wallboard) thus creating a superior interior wood faced panel material with all of the advantages inherent in Sheetrock (see page 2). The appearance is identical to high class wood panels.

Sheetrock Panelwood is finished (staining, varnishing, etc.) in accordance with standard specifications for wood.

The Sheetrock is improved in that the gypsum core is denser and exceedingly tough and strong—the fiber covering (over which the wood is applied on the face side) is heavier and stronger than formerly. The material, full 3/8 in. thick, has sufficient body to assure rigidity, long life, and exacting service.

TYPES OF WOOD

Standard—The standard woods available in Sheetrock Panelwood are walnut, mahogany, and quartered American oak. They are shipped in the natural wood and are ready for whatever type of finish is desired.

Special—In addition to the standard woods above, Sheetrock Panelwood, on special order, can be furnished in other wood finishes (subject to their availability).

SIZES OF PANELS

Standard—Standard sizes are 4 ft. x 8 ft. and 4 ft. x 10 ft.

Special—Sheetrock Panelwood can be furnished in any size up to maximum standards to meet special requirements at additional cost.

HOW SHIPPED—Sheetrock Panelwood is crated with edges and faces protected to withstand shipment. Standard panels should be used wherever possible to obtain the utmost economy on the job.

Panels made in other than standard widths must be cut to size, entailing extra time and expense.

Further economy is obtained through the use of panels of standard sizes because an even number may be packed in a single crate.

It should always be kept in mind that Sheetrock Panelwood is a finished product, similar to fine wood finish.

It should be handled and piled so as to protect the face and edges, and wherever possible should be delivered to the mill or job in the original crates.

*Trade-Mark

INSULATING SHEETROCK

Insulating Sheetrock* is Sheetrock upon the back of which is mounted a thin, smooth, bright sheet of aluminum. Insulating Sheetrock is applied to the interior face of exterior walls, rafters, or top story ceilings with the bright aluminum side next the framing members facing the open space between. Thus installed, its heat insulating value is equal to or better than that of standard ½ in. thick Fiber Insulating Board—at the same time it has all the inherent qualities of standard Sheetrock as an excellent interior wall finish. It is applied and finished as specified for Sheetrock. For complete data see USG "Thermal Insulation" Section.

SHEETROCK TILE BOARD*

A Wallboard Replica of Ceramic Tile

DESCRIPTION—Sheetrock Tile Board is a fireproof, gypsum wallboard made to obtain conveniently and at low cost, beautiful tiled-wall effects. It is a perfected product that makes possible lacquered and enameled surfaces that resemble the best ceramic tile in any shade of color desired, thus enabling the decorator to obtain complete color harmony.

After Sheetrock Tile Board has been erected and decorated, it can be washed clean when soiled. The surfacing of Sheetrock Tile Board is of heavy fiber, which has a distinctive cream color, especially adapted for decorating.

SIZES—Sheetrock Tile Board is made in panels ⅜ in. thick, 48 in. wide and 6, 7, 8, 9 and 10 ft. long. The tile impressions are 4¼ x 4¼ in., a standard size for built-in fixtures. There is a selvage or trimming edge on each panel end outside the tile pattern. The panels are packed two in a bundle, with the tile face inside and edges reinforced.

ADVANTAGES—Because it is made from gypsum, Sheetrock Tile Board does not burn. Neither does it warp or buckle, nor does it harbor vermin. It is light enough for convenient erection and can be nailed, sawed and fitted with the ease of wood.

The material has all the advantages inherent in Sheetrock.

USE—Use for tiled-wall effect in bathrooms, kitchens, lavatories, lunchrooms, dairies, doctors' offices, restaurants, delicatessens and barber shops.

ERECTION AND DECORATING—Complete directions for erection and decorating of Sheetrock Tile Board are on the back of each panel.

Sheetrock Tile Board is Economical to Buy and Economical to Erect. The Large, Flat, True Sheets are Nailed in Place by any Carpenter.

Sheetrock Tile Board is Easy to Decorate. Paint Covers Well over its Ivory Non-absorptive Surface. Joints may be Painted to Simulate Tile Joints.

*Trade-Mark

GYPLAP

Fireproof Sheathing

DESCRIPTION—Gyplap* is a fireproof solid sheet of gypsum encased in a tough, fibrous, water-resisting covering. The ends are coated to resist moisture. It is an ideal material for sheathing on frame structures under siding, shingles, stucco, and brick veneer. Gyplap Sheathing has tongue and groove edges on the long dimension to provide positive assurance of a tight fit at the unsupported joints. Gyplap Sheathing does not open up at joints with moisture and temperature changes. It is applied with its length at right angles to the studs.

INSULATING GYPLAP—Insulating Gyplap is Gyplap, upon the back of which is mounted a thin, smooth, bright sheet of aluminum. Insulating Gyplap is applied to the exterior face of exterior walls with the bright aluminum side next the framing members. Thus installed, its heat insulating value is equal to or better than that of standard ½ in. thick Fiber Insulating Board.

SIZES—Gyplap is ½ in. thick, 24 in. wide, 6 ft. 8 in. and 8 ft. long to fit supports 16 in. on centers.

ADVANTAGES—

Fireproof—Does not burn or readily transmit heat. It interposes a substantially thick fireproof sheet over the wood frame.

Permanent—Does not disintegrate.

Moistureproof—The outer surface is specially treated to resist moisture. No building paper is required. The ends are coated to resist moisture.

Windproof—The continuous surface with wind-tight horizontal joints (the end joints occur only over supports) prevents air leakage.

Economy and Convenience—The sizes of Gyplap are convenient and economical to erect. It cuts and nails as easily as lumber, adapting it to any building condition. Every sheet of Gyplap is true and uniform—no knots or waste material.

Strength—The large units of Gyplap span across seven studs spaced 16 in. on centers and thoroughly brace the framework.

STRENGTH AND RIGIDITY TESTS—Strength tests of Gyplap and of ⅞-in. thick wood sheathing applied both horizontally and diagonally, conducted by Columbia University in New York City, and Armour Institute of Technology in Chicago, are ample proof of the strength and rigidity of gypsum sheathing, and its suitability for all purposes for which wood sheathing has usually been employed.

Master Specifications

GYPLAP—FIREPROOF SHEATHING

NOTE—*Siding, stucco and brick veneer may be applied over Gyplap or Insulating Gyplap in the usual manner.*

(1) SHEATHING

Sheathing shall be **[Gyplap] [Insulating Gyplap]** as made by the United States Gypsum Company, ½ in. thick, 24 in. wide, 6 ft. 8 in. or 8 ft. long. Nails for application shall be 1¾ in. long, No. 10½ gauge, galvanized flat head roofing nails.

(2) APPLICATION

Apply **[Gyplap] [Insulating Gyplap]** with groove side down and **[trade-mark] [aluminum foil]** side in, directly to framework with length at right angle to supports.

Butt the ends tightly over a support and interlock the side edges. Stagger vertical joints.

Fit tightly around all openings.

Fasten securely with nails spaced 4 in. apart on each bearing, set ⅜ in. from end edges.

Do not cover Gyplap with building paper.

*Trade-Mark

(3) SIDING

Apply siding at right angles to studding directly over Gyplap. Nail only to studs with nails sufficiently long to pass through the Gyplap.

(4) STUCCO

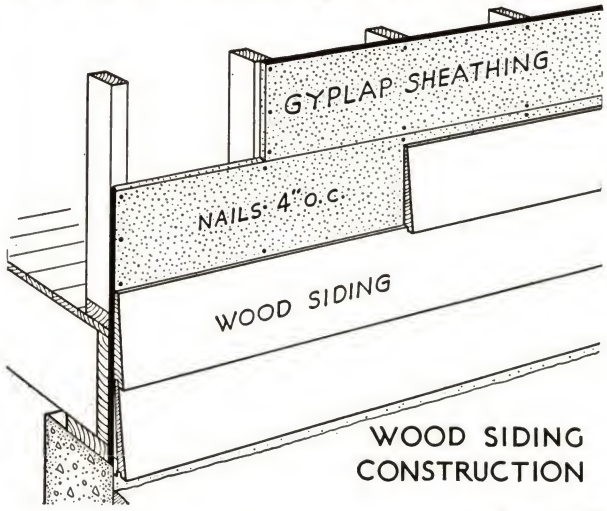
Apply 3.4 lb. Red Top Self-Furring Diamond Mesh Lath **[Galvanized] [Copper Bearing Steel, Painted] [Pure Iron, Painted]** at right angles to the studs. Lap lath ½ inch on sides and 1 inch on ends. Carry metal around all corners to first support. Secure with 6d galvanized nails approximately 6 inches apart on centers driven through the Gyplap into the studs. Drive nails well in and bend to engage at least two lath strands. Thoroughly secure metal at all openings.

NOTE—*Follow standard specification for the application of exterior stucco.*

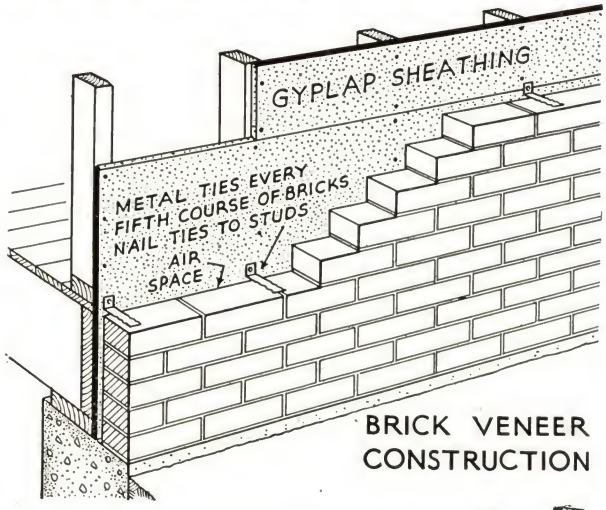
(5) SHINGLING

Over the Gyplap apply, secured through the Gyplap to each bearing, 1 x 2-in. furring strips to take shingle weathering specified.

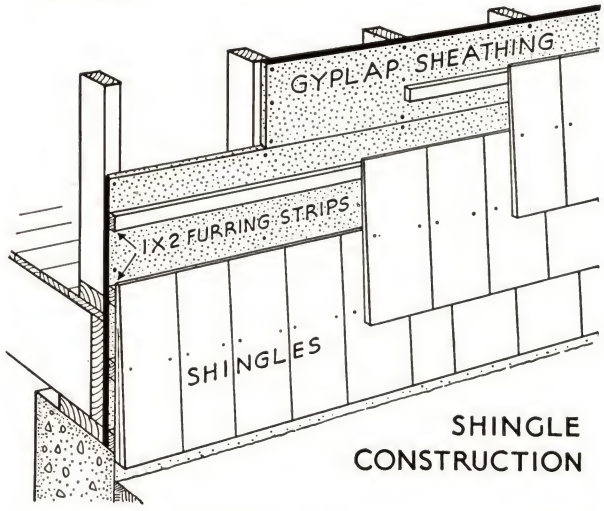
GYPLAP FIREPROOF SHEATHING CONSTRUCTION DETAILS



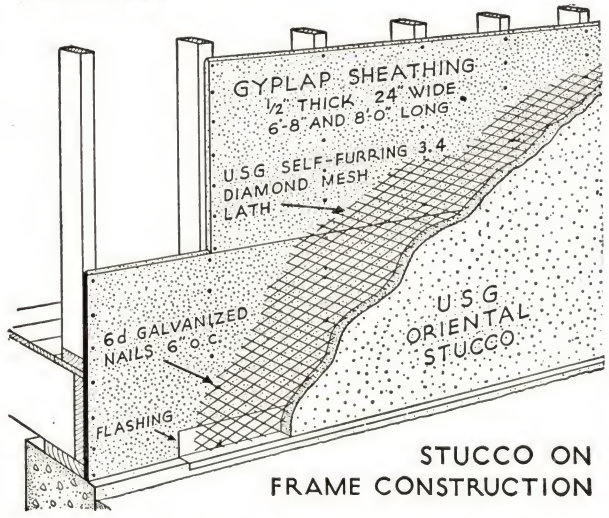
WOOD SIDING CONSTRUCTION



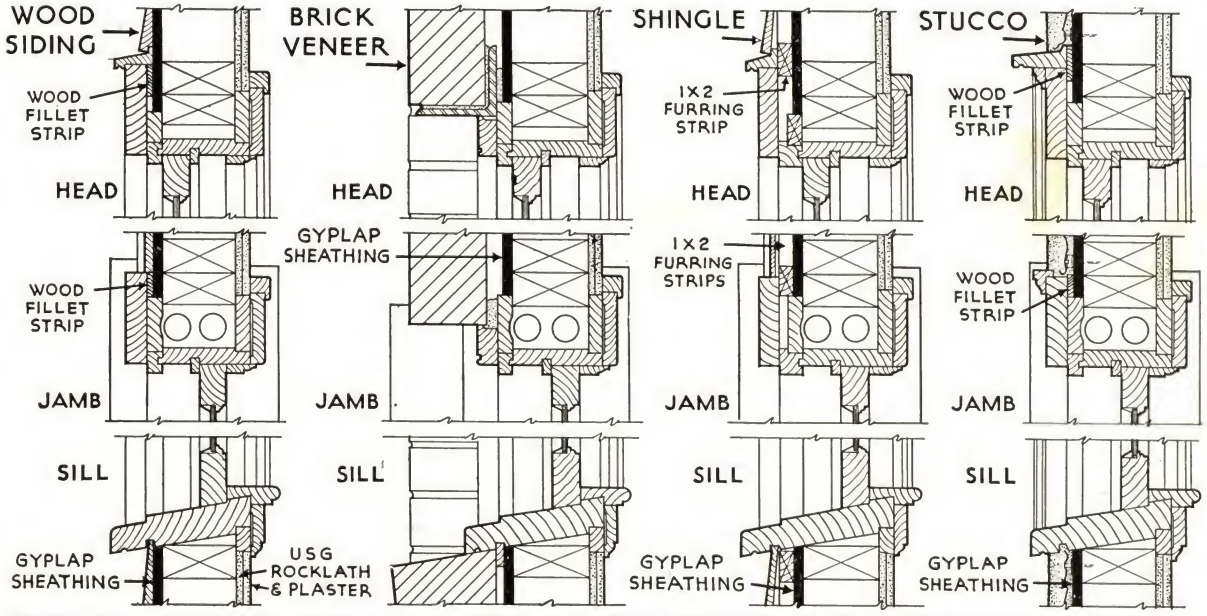
BRICK VENEER CONSTRUCTION



SHINGLE CONSTRUCTION



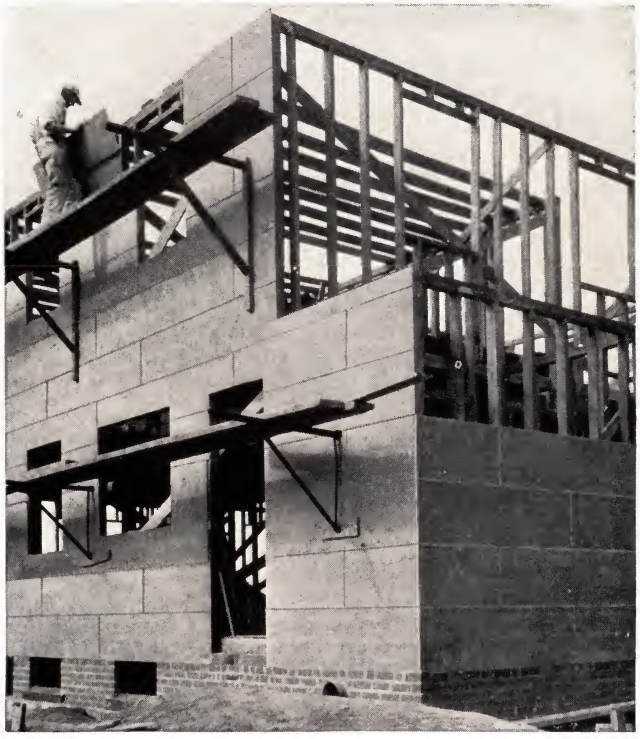
STUCCO ON FRAME CONSTRUCTION



TYPICAL WINDOW DETAILS - GYPLAP SHEATHING WITH STANDARD FRAMES

GYPLAP • THE FIREPROOF SHEATHING
TYPICAL INSTALLATIONS

The convenient sized sheets of Gyplap quickly cover the framework of the house



Gyplap has tongue and groove edges on the long dimension to make tight-fitting joints

Gyplap sheets span six spaces between studding spaced 16 inches on centers

It is easy to cut Gyplap, the Fireproof Sheathing, for short lengths without waste

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METAL LATH

BUILDING ACCESSORY PRODUCTS
STEEL PLASTERING COMMODITIES

BERLOY Blue LABEL Line

BUILDING PRODUCTS

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FOR more than fifty years, the Berger Manufacturing Division of Republic Steel Corporation, has been famous in the sheet metal industry. The Berger name is known for the successful pioneering of many fabricated metal building products.

The new Berloy Blue Label Line of Steel Building Products includes:

Sheets	Ternes
Roofings	Conductor Pipe
Flashings	Fittings
Sidings	Roll Tin
Ridge Roll	Metal Lath
Gutters	Metal Ceilings
Roll and Formed Valley	Furnace Pipe Fittings
Eaves Trough Fittings	Forced Air Pipe Fittings

All are available in Toncan Iron, Berloy Copper Alloy, Berloy Open Hearth Steel, Terne and Copper. The limits of this catalog do not permit the illustrating of the entire line, but will serve to show the scope of available products.

Berloy—the Berger brand name—on these products assures their dependability. It identifies the high point in authentic design—in quality materials and capable craftsmanship in the Steel Building Products field.

Berger Manufacturing Division invites your architectural comments, criticisms and suggestions, and offers the services of a skilled consulting department in the use of prefabricated building products. Depend upon the well-known Berger and Berloy names to give you dependable products that will guarantee long life and satisfaction under the heaviest service on every job you have.

For additional information on the Berloy products illustrated, and for information on other Berger products for the building field, write direct to the main office.

BERLOY Blue LABEL line

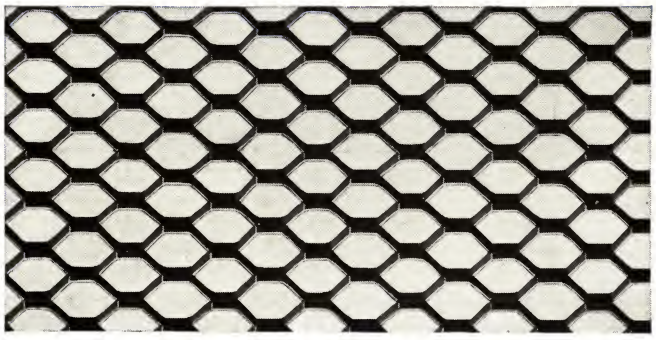
BERLOY EXPANDED METAL LATH

DIAMOND (EXPANDED METAL) LATH

STANDARD MESH

For firestops, cornices, false beam and column work and solid partitions. An ideal "general purpose" lath, easily cut, formed or bent to any shape to meet requirements of architectural design. Economical because small size of diamonds prevents forcing of excessive plaster through to back and also because the rigidity of the sheets permit low cost of erection.

Resquared on both ends to a length of 8 ft. 1 in., with sides absolutely straight. This eliminates the necessity for lapping.

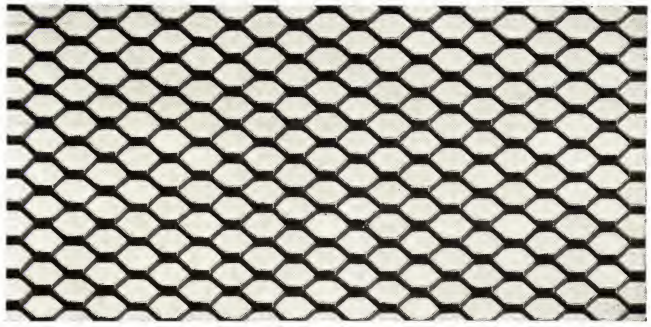


STANDARD MESH DIAMOND LATH

SMALL MESH

Similar in construction to Berloy Standard Mesh except that the diamonds are greatly reduced in size. An economical and highly efficient base for plaster in general construction. The smaller size of the diamonds increases the rigidity of the sheets and offers still greater resistance to the penetration of excess plaster.

Each sheet is perfectly smooth and flat and free from distortion.



SMALL MESH DIAMOND LATH

CORRUGATED (SELF FURRING) MESH

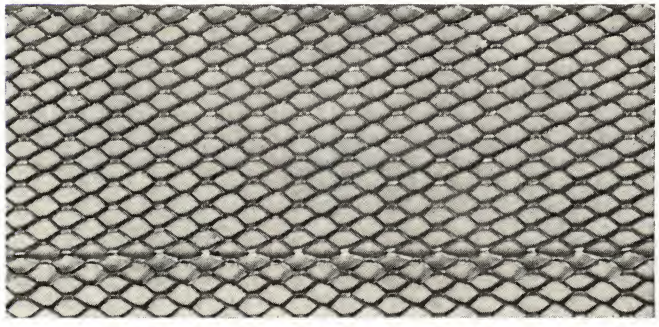
Particularly advantageous for exterior stucco construction when the lath is attached over sheathing, Berloy Corrugated Mesh eliminates the necessity of separate furring strips.

The ⅜ in. deep corrugations run the full length of each sheet, spaced 4 in. on centers. These corrugations provide the furring and, by providing exceptional rigidity, permit wider spacing of supports. In Corrugated Mesh construction the plaster or stucco keys in between the lath and the supporting stud or sheathing.

MATERIALS AND WEIGHTS (LBS. PER SQ. YD.)

Steel Painted	2.2, 2.5, 3.0, 3.4
Copper Bearing Steel	3.0, 3.4
Toncon Moly. Iron	3.4
Galvanized Steel	2.5, 3.4

Sheet Sizes: 24x96 in. Packed 9 sheets or 16 sq. yds. per bundle. Also 27x96 in. Packed 10 sheets or 20 sq. yds. per bundle.



CORRUGATED OR SELF-FURRING DIAMOND LATH

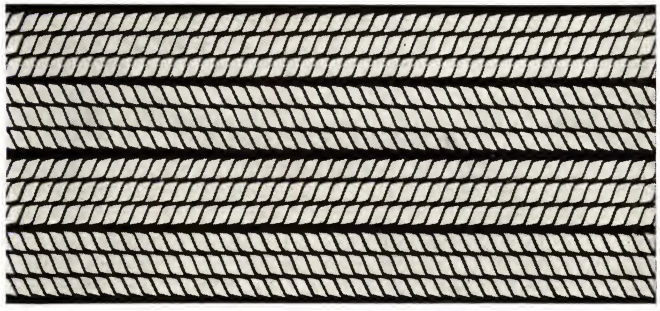
TRI-PLEX (FLAT RIB)

A widely used plaster base with characteristic features which produce considerable economy in the construction of a finished interior. Cross strands are so designed that alternate triple rows of keys are deflected in opposite directions, embedding the metal and producing a perfect mechanical bond with a minimum of plaster. The mesh of Tri-Plex lath is so fine that droppage of plaster is practically eliminated. Interlocking edges eliminate the necessity for side lapping, and the rigidity of the sheets allows wider spacing of studs without sacrificing strength in the walls.

MATERIALS AND WEIGHTS (LBS. PER SQ. YD.)

Steel Painted	2.75, 3.0, 3.4
Copper Bearing Steel	3.4
Toncan Moly. Iron	3.4
Galvanized Steel	3.4

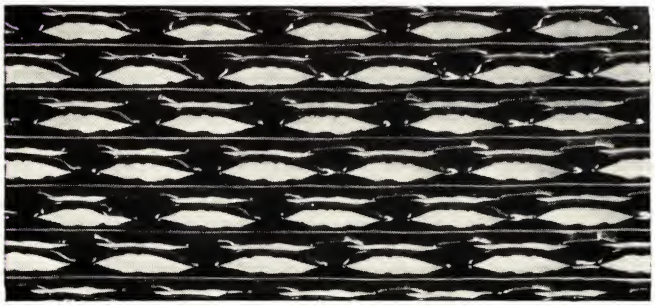
Sheet Sizes: 24x96 in. Packed 9 sheets or 16 sq. yds. per bundle.



TRI-PLEX (FLAT-RIB) LATH

BERLOY EXPANDED METAL LATH

⅜ IN. RIBPLEX LATH



BOSTWICK SHEET LATH

STUCCO MESH

FURRING NAIL INSTALLED

FURRING NAIL

⅜ IN. RIBPLEX LATH

For suspended ceilings, floor slabs in standard bar joist, floor and roof construction. Also used for attached ceilings under concrete joist construction. ⅜ in. ribs on 4 in. centers take the place of furring strips and nest together at sides and ends to make a rigid splice and a uniform plastering surface—a saving of labor and material. The flattened strands in ⅜ in. Ribplex decrease the size of the mesh openings and give a perfect key while requiring a minimum amount of plaster.

The sheets are convenient to handle and easy to erect, with no sharp cutting edges; ends are resquared after forming.

MATERIALS AND WEIGHTS (LBS. PER SQ. YD.)

Steel Painted 3.0, 3.4, 4.0
Copper Bearing Steel 3.4
Toncan Moly. Iron 3.4
Galvanized Steel 3.4

Sheet Sizes: 24x96 in. Packed 9 sheets or 16 sq. yds. per bundle.

BOSTWICK SHEET LATH

An ideal base for tile backing, due to its extreme rigidity and resistance to the penetration of plaster. This type of lath actually requires less plaster than wood. Sharply defined ribs are spaced 1 in. on center, giving an unusual percentage of metal as compared to open area.

Economical for use in straight-away plastering, though due to its design, it does not lend itself to easy bending or forming for architectural plastering. **(Where bending or forming is necessary, Berloy Diamond Laths will prove more advantageous.)**

MATERIALS AND WEIGHTS (LBS. PER SQ. YD.)

Steel Painted 4.5
Galvanized Steel 5.2

Sheet Sizes: 24x96 in. Packed 9 sheets or 16 sq. yds. per bundle.

STUCCO MESH

A highly satisfactory stucco reinforcement—for use over sheathing—which produces a permanent, fireproof and crack-proof exterior. Expanded from 17 gage steel, with 1¼ in. x 2½ in. diamonds. A special type of nail **(shown at left),** used for attaching Stucco Mesh to the sheathing, acts as a furring device and securely locks the mesh ⅜ in. from the sheathing. This accurate furring method and the large size diamond mesh permit the stucco to penetrate the Stucco Mesh and thoroughly embed it.

MATERIAL AND WEIGHT

Supplied in painted steel in 1.8 and 3.6 lbs. per sq. yd. Sheet Sizes: 2 or 4 ft. wide by 8 ft. long. 1.8 lbs. packed 9 sheets (144 or 288 sq. ft.) per bundle. 3.6 lbs. packed 5 sheets (80 or 160 sq. ft.) per bundle. Nails packed 850 per box. 10 nails required per sq. ft. of Stucco Mesh.

SPACING OF SUPPORTS FOR LATH—INCHES

TYPE OF LATH	Vertical Surfaces Partitions, Walls, Furring, etc.								Horizontal Surfaces Ceilings, etc.							
	Weight, sq. yd. lbs.	A	B	C	D	E	F	G	Weight, sq. yd. lbs.	A	B	C	D	E	F	H
FLAT EXPANDED	2.2	§							3.0	x	†					
	2.5	x	†‡	†‡					3.4	x	x	†				
	3.0	x	x	†‡												
	3.4	x	x	†‡												
FLAT RIB	2.75	x	x	x					2.75	x	†	†				
	3.0	x	x	x	x				3.0	x	x	x	†			
	3.4	x	x	x	x	‡			3.4	x	x	x	x			
	4.0	x	x	x	x	‡			4.0	x	x	x	x			
⅜-in. RIB or EQUAL IN RIGIDITY	3.0	x	x	x	x	x			3.0	x	x	x	x	x		
	3.4	x	x	x	x	x	x		3.4	x	x	x	x	x	x	#
	4.0	x	x	x	x	x	x	‡	4.0	x	x	x	x	x	x	#
SHEET LATH π	4.5	x	x	x	x	x			4.5	x	x	x	x	†		

A—12-in.
B—Over 12-in. Incl. 13½-in.
C—Over 13½-in. Incl. 16-in.
D—Over 16-in. Incl. 19½-in.
E—Over 19½-in. Incl. 23½-in.
F—Over 23½-in. Incl. 31½-in.
G—Over 31½-in. Incl. 36-in.
H—Over 31½-in. Incl. 33½-in.

x Permissible for all purposes.

§ This weight of lath permissible only for solid partitions, and for cornerite.

† Permissible only for nailed on work (to wood joists or wood stud construction).

‡ This spacing for this lath permissible only for solid partitions.

π Recommended spacings for other weights and types of Sheet Lath may be obtained from Manufacturers.

Permissible only under concrete joists, etc.

Note: Vertical Surfaces—For Concrete Stucco, expanded metal reinforcing weighing either 1.8 or 3.6 lbs. per sq. yd. is used. Supports shall not be greater than 8-in. on centers in both directions.

Note: Horizontal Surfaces—Minimum weight of metal lath for ceiling construction shall be 2.75 lbs. per sq. yd., exclusive of paper or other backing.

BERLOY Blue LABEL Line

BERLOY EXPANDED METAL LATH

¾ IN. RIBPLEX REINFORCEMENT

Unusual stiffness and weight make this a most effective reinforcement and centering for concrete floors and roofs, and for plaster partitions and ceilings on extremely wide spacing or supports. Also useful in special work such as tanks, curtain walls, culverts and railings.

For floor and roof construction ¾ in. Ribplex effects substantial savings in dead weight, materials and supporting structure, while offering a perfect combination of fire-resistance, permanence and economy. Ribs, ¾ in. high at 4.8 in. centers, support the stiff steel mesh.

MATERIALS AND WEIGHTS (LBS. PER 1000 SQ. FT.)

Steel Painted..... 50, 60, 75
Copper Bearing Steel..... 75
Toncan Moly. Iron..... 75
Galvanized Steel 50, 75

Sheet Sizes: 2 ft. wide, 8, 10 or 12 ft. long.
Packed 9 sheets (144, 180 or 212 sq. ft.) per bundle.

SAFE LOAD TABLES FOR ROOF AND FLOOR

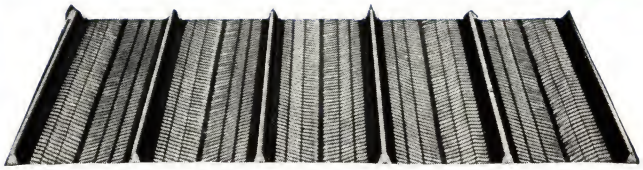
Slab Thickness	Weight per 100 sq. ft.	Max. unsupported span for wet concrete	3	4	5	6	7	8	9	10
2" 24-lb. per sq. ft.	50	3'-3"	291	164	104	73				
	60	3'-6"	346	194	124	85	63			
	75	4'-0"	405	228	146	101	74			
2½" 30 lb. per sq. ft.	50	3'-0"	376	211	135	94	69	53		
	60	3'-3"	449	253	162	112	82	62		
	75	3'-8"	588	331	211	147	108	81		
3" 36-lb. per sq. ft.	50	2'-9"	465	261	168	116	85	65		
	60	3'-0"	550	309	198	137	101	77	61	
	75	3'-4"	722	406	260	180	133	101	84	
3½" 42 lb. per sq. ft.	50	2'-6"	550	310	198	137	101	77	64	
	60	2'-9"	654	368	237	163	120	92	72	
	75	3'-0"	861	484	310	214	158	121	96	
4" 48-lb. per sq. ft.	50	2'-3"	640	360	230	160	117	90	71	
	60	2'-6"	756	425	272	188	139	106	84	68
	75	2'-9"	997	561	359	249	183	140	110	90

ACCESSORIES FOR ¾ IN. RIBPLEX

No. 1 Side Clips are used for supporting side lap between supports or purlins.

No. 2 Purlin Clip is used for attaching ¾ in. Ribplex to structural steel purlins.

No. 3 Ceiling Clip is used to attach ¾ in. Ribplex to underside of steel purlins for ceiling construction.



¾ IN. RIBPLEX REINFORCEMENT

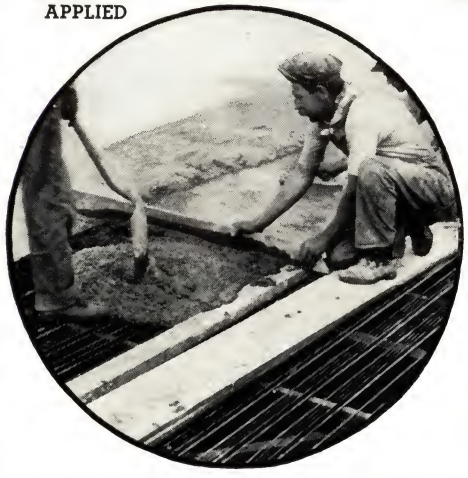
No. 1 SIDE CLIP

Showing Purlin Clip in Place with Prongs Hammered Down

No. 2 PURLIN CLIP

SIDE CLIP APPLIED

No. 3 CEILING CLIP



Laying Concrete on Ribplex Roof

CEILING LATH

Maximum Permissible Spacings of Cold Rolled Furring Channels

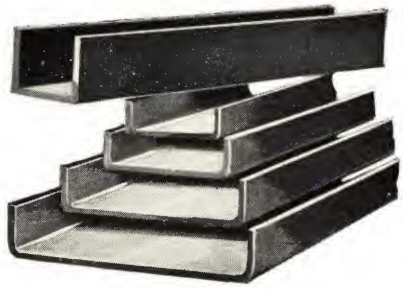
As Determined by Stiffness in Lath

TYPE OF LATH	Weight, sq. yd.	Spacing	Maximum Spans ¾-in. Channels	Maximum Spans 1-in. Channels
FLAT EXPANDED	3.0 lbs.	12	48	54
	3.4 lbs.	13½	48	54
FLAT RIB	2.75 lbs.	12	48	54
	3.0 lbs.	16	48	54
	3.4 lbs.	19	42	54
	4.0 lbs.	19	42	54
⅜-in. RIB or EQUAL IN RIGIDITY	3.0 lbs.	23½	36	48
	3.4 lbs.	31½	30	42
	4.0 lbs.	31½	30	42
SHEET LATH	4.5 lbs.	19	42	54

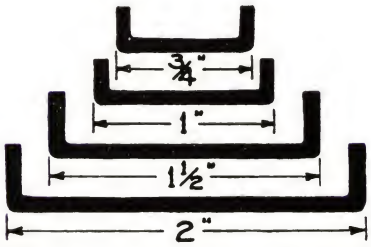
As Determined by Span and Stiffness of Channels

Span ¾-in. Channel	Span 1-in. Channel	Maximum Permissible Spacing Center to Center
30	42	31½
36	48	23½
42	54	19
48	54	16

BERLOY PLASTERING COMMODITY PRODUCTS



COLD ROLLED CHANNELS



CROSS SECTIONAL VIEW OF BERLOY COLD ROLLED CHANNELS

CORNERITE

STRIP-ITE

TIE WIRE IN ROLLS

TIE WIRE IN HANKS

BERLOY TIE AND HANGER WIRE

BERLOY COLD ROLLED CHANNELS

For suspended ceilings, partitions, etc., Berloy Cold Rolled Channels are straight and true, with square corners that prevent rolling. Flanges are ⅜ in. high, standard lengths 16 and 20 feet. ¾ in. and 1 in. channels are shipped 20 pieces to bundle· 1½ in. and 2 in., 10 pieces to bundle.

Weights per 1,000 linear feet are as follows: ¾ in. channel, 276 lbs.; 1 in. channel, 332 lbs.; 1½ in. channel, 422 lbs.; 2 in. channel, 553 lbs.

BERLOY HOT ROLLED CHANNELS, ANGLES AND BANDS

Hot Rolled Channels, Angles, and Bands are available in the following sizes and weights per 1,000 linear feet.

Channels: ¾"— 300 lbs.
1"— 410 lbs.
1½"— 850 lbs.
2"—1250 lbs.

Angles: 1½"x1½"x⅛"—1,150 lbs.
1½"x1½"x$\frac{3}{16}$"—1,650 lbs.

Flats: 1"x⅛"—380 lbs.
1"x$\frac{3}{16}$"—580 lbs.

BERLOY CORNERITE

A practical and economical reinforcement for all inside plaster corners. Formed from a sheet of diamond mesh lath, it fits into the room corners and reinforces the plaster in all directions. Accurately machine made, it is straight and true and easy to plaster over. It comes to the job protected with a coat of clack asphalt paint. Packed 50 pieces or 400 ft. per crate.

WEIGHTS AND DIMENSIONS

Size, in.	Weight, lbs. per 1000 ft.	Length, ft.	Material
2x2	80	8	Ptd. Steel or Galv. Steel
3x3	120	8	Ptd. Steel or Galv. Steel
4x4	160	8	Ptd. Steel or Galv. Steel

BERLOY STRIP-ITE

For forming plaster reveals around window and door openings; for reinforcing odd shaped corners; for all types of plastering patch work; for any openings that are narrower than a full width sheet of lath; for reinforcing plaster and wall board joints and corners. Berloy Strip-ite is a diamond metal lath strip easily bent to form and economical to handle. Furnished in bundles of 50 pieces or 2000 ft. per crate.

WEIGHTS AND DIMENSIONS

Size, in.	Weight, lbs. per 1000 ft.	Length, ft.	Material
3	60	8	Ptd. Steel or Galv. Steel
4	80	8	Ptd. Steel or Galv. Steel
6	120	8	Ptd. Steel or Galv. Steel

BERLOY TIE AND HANGER WIRE

Made in a complete range of sizes. For tying, 16 or 18 gauge galvanized or black wire is generally used. For hangers either No. 8 or No. 7 galvanized or black wire. Berloy tie wire comes in 20 in. rolls or in 25 lb. hanks cut to length. Sold by the pound in quantities to meet requirements.

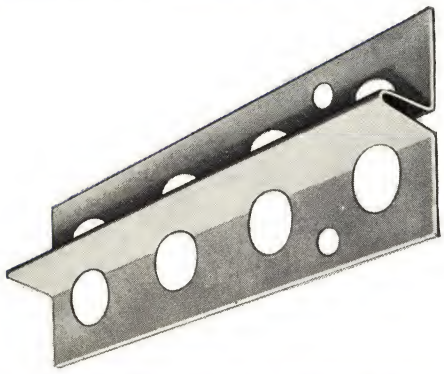
BERLOY PLASTERING COMMODITY PRODUCTS

BERLOY STRAIGHT POINT BASE SCREED

For use as a finished edge for concrete or other troweled bases when they come flush with the plaster. Berloy Straight Point Base Screed have unusually wide flanges and keying surface and prevent the possibility of cracking at edges. Packed 10 pieces per bundle or 1000 ft. per crate. Made in galvanized steel.

WEIGHTS AND DIMENSIONS

Ground Dimensions, in.	Gauge	Weight, lbs. per 1000 ft.	Length, ft.
½	26	185	10
¾	26	215	
1¼	24	230	
1½	24	270	
1¾			



BERLOY STRAIGHT POINT BASE SCREED

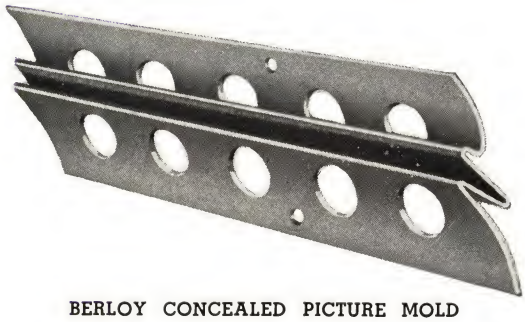
BERLOY CONCEALED PICTURE MOLD

Berloy Concealed Picture Mold is an ideal mold, since it is applied before plastering and is almost invisible when the finish coat is applied. Packed 10 pieces per bundle or 1000 ft. per crate.

WEIGHTS AND DIMENSIONS

Gauge	Weight, lbs. per 1000 ft.	Length, ft.	Material
26	220	10	Galvanized Steel

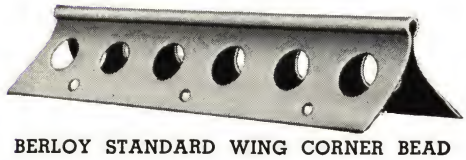
Packed 10 pieces per bundle of 1000 ft. per crate.



BERLOY CONCEALED PICTURE MOLD

BERLOY STANDARD WING CORNER BEAD

Especially adaptable to all nail-on work. Berloy Standard Wing corner Bead is made with a flange width of 1⅜ in., is economical in cost and acts as an effective protection. Made from 26 gauge best grade steel galvanized and furnished in standard lengths of 6, 7, 8, 9, 10 and 12 ft. Packed 10 pieces to a bundle.

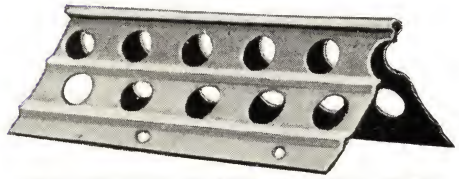


BERLOY STANDARD WING CORNER BEAD

BERLOY WIDE FLANGE CORNER BEAD

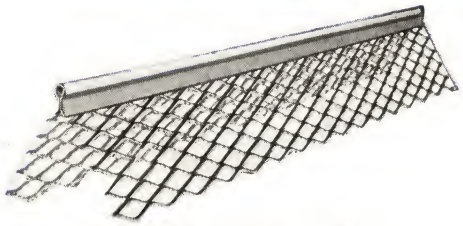
Recommended for use where extreme rigidity coupled with exceptional width of flange is desired. Berloy Wide Flange Corner Bead has a 2½ in. wide flange reinforced with two corrugations spaced 1 in. apart running parallel to its length. Two rows of holes provide exceptional bond for the plaster. The outer edge of flange is provided with nail holes spaced 2¼ in. on centers.

Especially adapted to all nelling work. Made from 26 gauge best grade steel galvanized and furnished in standard lengths of 6, 7, 8, 9, 10 and 12 ft. Packed 10 pieces to a bundle.



BERLOY WIDE FLANGE CORNER BEAD

BERLOY PLASTERING COMMODITY PRODUCTS



EXPANDED CORNER BEAD

BULL NOSE EXPANDED FLANGE CORNER BEAD

BULL NOSE CORNER BEAD
¾ IN. RADIUS STANDARD SHORT WING

BERLOY ¾ IN. R SOLID FLANGE BULL NOSE CORNER BEAD

BERLOY C.B. CLIPS

Expanded Flange Bull Nose Corner Bead

Small Nose—Permits keying of the plaster close to the head and leaves no flat surface to which the plaster may not adhere. Manufactured from galvanized steel, with a heavy shoulder to assure straightness and rigidity. Round nose strongly reinforced by a deep groove which holds the plaster flush for a perfect bond at the head.

2½ in. wide expanded apron, made integral with bead, eliminates the necessity of attaching separate clips and gives from 2 to 2¼ in. projection on plaster base. Packed 10 pieces to the bundle.

Bull Nose—Used where broad curved corners require extra protection.

WEIGHTS AND DIMENSIONS

Expanded Flange Small Nose Corner Bead

Size, in.	Gauge	Weight, lbs. per 1000 ft.	Length, ft.	Material
2½	26	210	6, 7, 8	Steel Galv.
2½	24	240	9, 10, 12	Steel Galv.
5	24	430		Steel Galv

Expanded Flange Bull Nose Corner Bead

Size, in.	Gauge	Weight, lbs. per 1000 ft.	Length, ft.	Material

Standard Flange Bull Nose

¾ Radius	26	255	6, 7, 8,	Steel Galv.
¾ Radius	24	290	9, 10, 12	Steel Galv.

2½ In. Wide Flange Bull Nose

¾ Radius	26	420	6, 7, 8, 9, 10, 12	Steel Galv.

Scalloped Edge Bead

1¾"	26	220	6, 7, 8	Steel Galv.
2½"	26	370	9, 10, 12	Steel Galv.

CORNER BEAD CLIPS

WEIGHTS AND DIMENSIONS

Gauge	Weight, lbs. per 1000 pieces	Material
26	25	Blue Steel

All Corner Beads packed 10 pieces to a bundle or 100 pieces to a crate. Clips packed 1000 pieces per carton.

BERLOY PLASTERING COMMODITY PRODUCTS

CORRUGATED AND HERRINGBONE WALL TIES

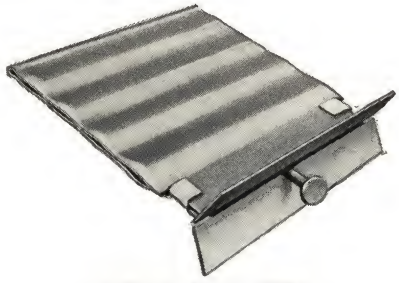
A series of herringbone corrugations give the ends a firm hold, while the center cannot stretch in use. Herringbone Ties are made from galvanized steel in 26 gauge, 7 in. long x ⅞ in. wide, crimped both ends, with nail hole in one end for brick veneer work. Shipped in boxes of 1,000 pieces. Weight, approximately 35 lbs. per box.

BERLOY CORRUGATED WALL TIES

BERLOY HERRINGBONE WALL TIES

WALL PLUGS

Inserted at masonry joints, Berloy Wall Plugs afford an efficient means of nailing interior trim. Made of heavy galvanized stock. They are 2⅞ in. deep and 2¼ in. wide. Depth of entrance flange is $\frac{11}{16}$ in. Packed 250 to the carton. Shipping weight, 25 lbs. per carton.



BERLOY WALL PLUG

METAL ARCHES

The arches are fabricated of Galvanized Steel and are perfectly formed. The corner bead is integral with the arch. They are inexpensive in first cost and are easily erected. Made in Half Circle, Gothic and Elliptic design. They are made for use with 2x4 in. studs. The studs should be spaced 1½ in. wider than the finished opening.

STYLES OF METAL ARCHES

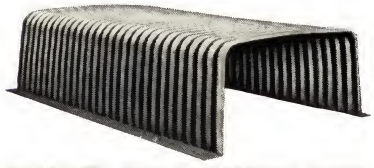
Style of Arch	Spacing at Studs or Bucks in.	Width of Finished Opening in.	Height from Spring Line to Crown, in.
No. 11	21½	20	10
No. 22	33	31½	15¾
No. 33	33	31½	11⅜
No. 44	51	49½	12½
No. 55	63	61½	13
No. 66	72	70½	13

Above arches are for Standard 2x4 in. studding. They can also be supplied for 2x6 in., 2x8 in., or 2x10 in. studding.
Packed in one-set cartons only.

METAL ARCH

BERLOY FLOOR CORE SYSTEM—PERMANENT INSTALLATION

Berloy Permanent Core System is an ideal type of reinforced concrete floor construction. Sheet metal cores are 26 gauge, stiffened with deep corrugations, and remain permanently on the floor. In construction ⅜ in. Ribplex Lath (for the ceiling) is placed on open centering. Cores are then laid on top of the Ribplex and nailed to the plank centering. Reinforcing steel erected in place and concrete placed over the cores complete the floor. After concrete has set, centering is withdrawn and lath ceiling is ready for plastering.



STRAIGHT SIDE PERMANENT CORE

END CAPS

Each row of cores or forms will require 2 or more end caps. Where an opening occurs, 2 end caps will be required as well as the 2 on the ends of the row. There is a proper end cap for all standard sizes and shapes.

Permanent end caps are 28 gauge.

STANDARD SIZES AND SHAPES

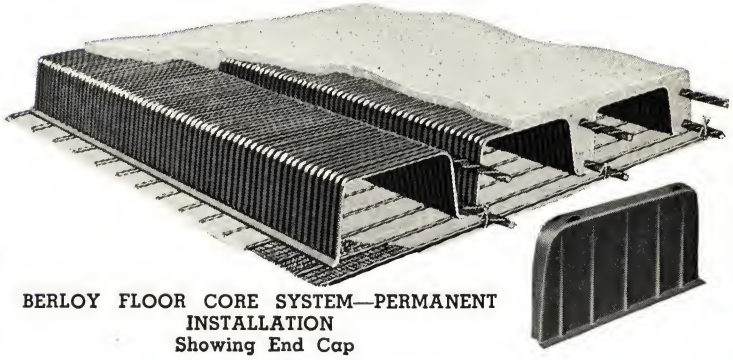
Standard widths, 20 in. Standard depths, 6 in., 8 in., 10 in., 12 in., 14 in. Length, 3 ft. 0 in and 1 ft. 6 in. Gauge 26. Material—Open hearth steel.

Special widths, 12 in. and 16 in.

Also Single Tapered from 20 in. to 16 in. in width and Double Tapered 20 in. to 16 in. in width and depth decreased by two inches at one end.

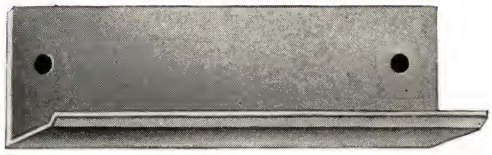
Tapered Cores furnished in 3 ft. 0 in. length only.

Tapered Cores not furnished in special or narrow widths.



BERLOY FLOOR CORE SYSTEM—PERMANENT INSTALLATION
Showing End Cap

BERLOY PLASTERING COMMODITY PRODUCTS



MODIFIED SQUARE SHORT FLANGE CASING
(Also made with Long Flange)

SHORT FLANGE CASING

EXPANDED FLANGE CASING

BERLOY STEEL CASINGS

These flush type casings are sanitary, easy to clean and in keeping with the general simplicity of modern interiors. They prevent cracking of the plaster, and air leakage around door and window openings. They are made with both solid and expanded type of flange.

DESIGN, WEIGHT AND GAUGE

Design	Weight lbs. per 1000 ft.	Gauge
SOLID FLANGE CASINGS		
Modified Square	210	24
	250	20
Wide Modified Square	310	24
	350	20
Wide Flange Square	250	24
	290	20
Short Flange Square	220	24
	320	20
Short Flange Bull Nose	220	24
	320	20
Wide Bull Nose	340	24
	450	20
EXPANDED FLANGE CASINGS		
2¾ in. Bull Nose	350	24
2⅝ in. O. G.	350	24
2¾ in. O. G.	350	24
Special 2½ in.	435	24

Any style can be had in ½, ⅝ or ¾ in. ground thickness.
Stock Lengths, 7 ft., 7 ft. 6 in., 8 ft., 9 ft., 10 ft. and 12 ft.

BERLOY FORMED STEEL LINTEL
Lengths—2 ft. 0 in. to 4 ft. 6 in.
3½ in. x 3½ in. x 11 Ga.
Lengths—5 ft. 0 in. to 7 ft. 0 in.
3½ in. x 4½ in. x 9 Ga.

BERLOY FORMED STEEL LINTELS

Berloy Formed Steel Lintels can be used for all openings up to 6 ft. 3 in. which do not require structural lintels. They are used with wood windows as well as with steel windows.

The continuous horizontal ribs and the turned edges provide much greater strength than plain formed angles of the same size and provide a proper bed for the brick and mortar. The 3½ in. horizontal leg does not extend beyond the face of the brick. Lintels receive a shop coat of paint before shipment.

BERLOY EXPANDED METAL

BERLOY EXPANDED METAL

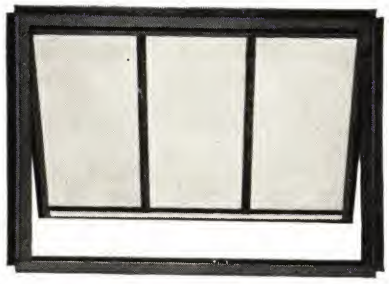
Berloy Expanded Metal is recommended for reinforcing material, partitions, gratings, machine guard purposes, lockers and similar work.

Where the nature of the work requires an open mesh material that is strong, light in weight, easy to handle and rigid but workable, Berloy Expanded Metal is economical and thoroughly practical.

BERLOY Blue LABEL Line

BERLOY BUILDING ACCESSORY PRODUCTS

BERLOY STEEL BASEMENT WINDOW



Berloy Steel Basement Windows give maximum daylighting; cannot warp or stick; they open easily, are weathertight and are simple to screen.

There are five standard stock sizes.

Steel mullions for joining two or more basement windows side by side in the same opening are also carried in stock.

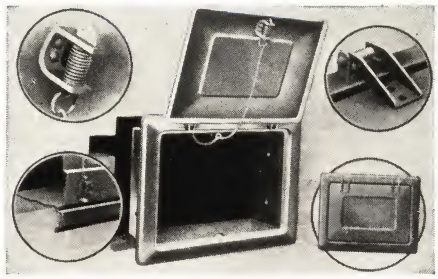
Glass Size	Lights	Window Opening Size
10"x12"	3	2' 9½"x1' 3"
10"x20"	3	2' 9½"x1' 11"
12"x18"	3	3' 3½"x1' 9"
14"x20"	2	2' 7¼"x1' 11"
*10"x12"	2	1' 11¼"x1' 3"

*Only in Top Hinged.

SCREENS FOR BASEMENT WINDOWS

Screens for basement windows are carried in stock at the plant for immediate shipment. Screens have steel frames and 16 mesh bronze cloth.

BERLOY COAL CHUTES



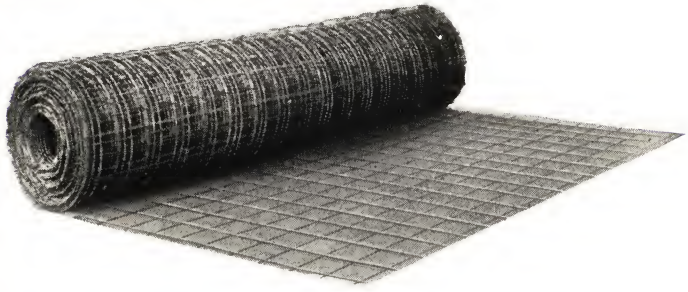
A convenient and economical improvement on the "cellar window." Breakproof, weather-proof and thief-proof. Simple construction made without castings; door and frame being of heavy rust-resisting copper bearing pressed steel.

Sold complete with positive spring latch, slotted hinges, which hold the door open, and formed lugs, which act as anchors for cementing in masonry openings.

STANDARD SIZES

Frame: 27 in. wide by 21¼ in. high.
Door: 22 in. wide by 16 in. wide.
Depth: 8 in. or 12 in.

BERLOY WELDED STEEL FABRIC



An ideal reinforcement for concrete pavements, roadways, floors, driveways, sidewalks, sewer pipe, viaducts, retaining walls or wherever concrete is used. Write for key table of dimensions, areas and weights.

BERLOY STEEL BUILDING PRODUCTS

Galvanized and Black Sheets
Toncan Iron
Stainless Steel

Roofing, Siding and Accessories
Battens, Corners

Roofing Ternes
Long Ternes, Valleys
Coke Tin Plate

Eaves Trough
Conductor Pipe and Trimmings

Gutters, Valleys
Ridge Roll
Cornices

Furnace Pipe
Ventilating Pipe and Fittings

Steel Ceilings
Metal Shingles

Metal Lath
Corner Beads
Channels and Accessories

Basement Windows
Screens
Steel Lintels

Coal Chutes
Ash-pit Doors

Fencing—Woven
Barb, Posts, Gates
Staples, Nails
Bolts, Wire

WAREHOUSES AND BRANCH OFFICES
IN PRINCIPAL CITIES

BERGER MANUFACTURING DIVISION

REPUBLIC STEEL CORPORATION

CANTON, OHIO

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BUILDING TECHNOLOGY HERITAGE LIBRARY
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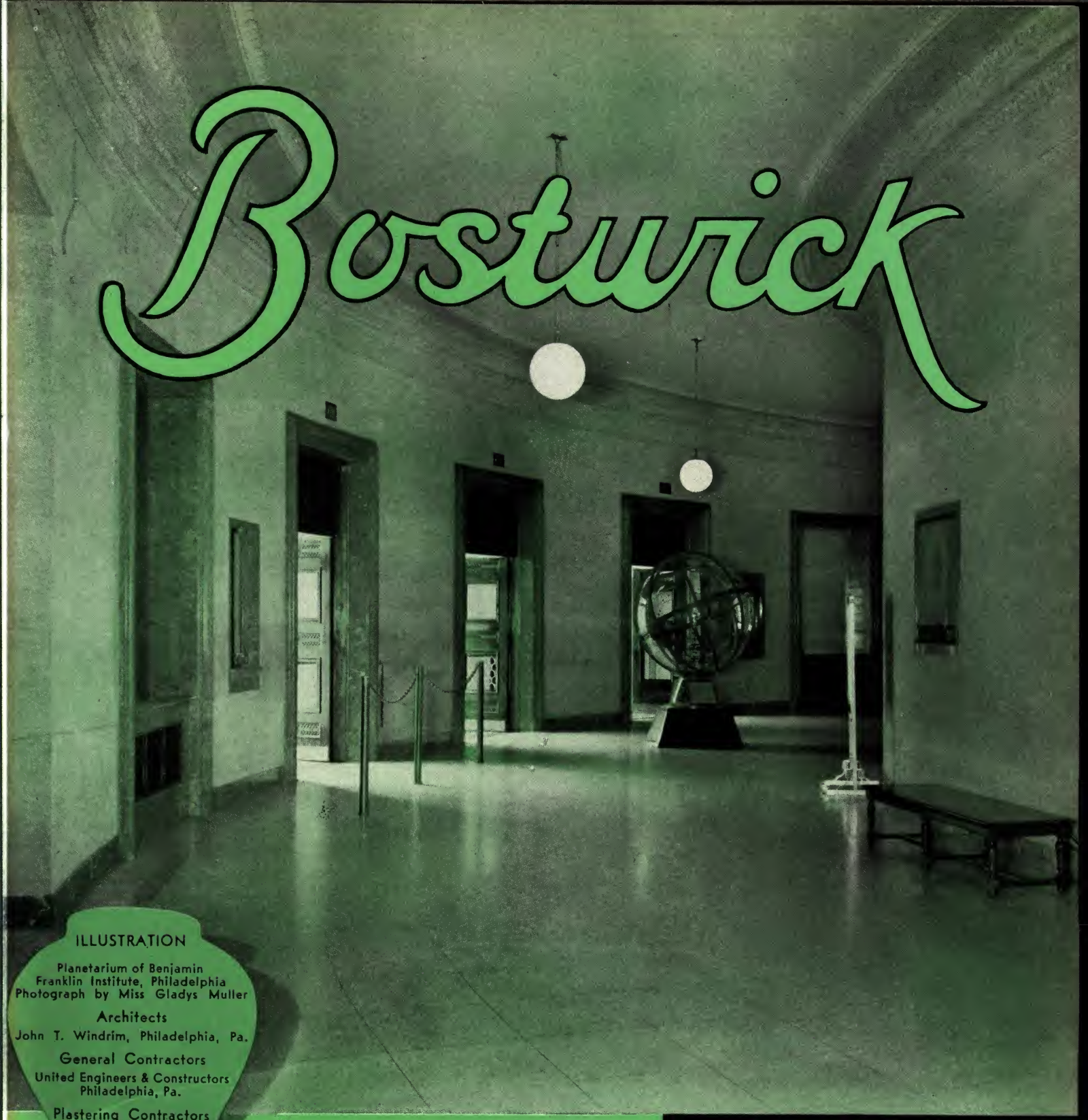


ILLUSTRATION

Planetarium of Benjamin Franklin Institute, Philadelphia
Photograph by Miss Gladys Muller

Architects

John T. Windrim, Philadelphia, Pa.

General Contractors

United Engineers & Constructors
Philadelphia, Pa.

Plastering Contractors

George Katz & Co.
Philadelphia, Pa.

THE Bostwick STEEL LATH COMPANY

NILES, OHIO — Eastern Warehouse, PHILADELPHIA, Pa.

STEEL LATH

THE Bostwick STEEL LATH COMPANY

Since 1890

(Right) Clipping Bostwick Channelform Reinforcement in floor slab construction.

(Center) Use of Super-Bostwick "Truss-Loop" Lath in partition, floor, and ceiling applications in Senior School, Jamestown, N. Y.

Specialists in Metal Lath and Accessories

Nearly half a century of continuous manufacture of metal lath and accessories stands behind The Bostwick Steel Lath Company's reputation as one of the foremost manufacturers in the world.

Bostwick Metal Lath was first made in 1890. Thoroughly tested by time, it enjoys a most successful record for durability and satisfactory service in outstanding buildings of every type.

All Bostwick Lath is made and sold in accordance with Simplified Practice Recommendation R3-36 of the U. S. Department of Commerce, and Federal Specification No. QQ-B-101-B.

Bostwick Co-operation with Architects and Specification Writers

Bostwick's staff of experts stands ready to assist you at all times. Inquiries addressed directly to our main office will receive prompt attention. We provide standard specifications for all types of Bostwick Metal Lath or Partition construction and will be glad to supply information about actual installations of every description.

Bostwick Facilities for National Distribution

Responsible dealers in Bostwick products are conveniently located in trading centers throughout the country. They carry adequate stocks for the usual needs of contractors and builders. Twenty-four-hour service is maintained in factory shipments. Bostwick dealers are responsive to inquiries for information and prompt in rendering service.

BOSTWICK METAL LATH Pages 4 to 9

The Improved Super-Bostwick "Truss-Loop" Lath

The best known metal lath, a standard product with an unbroken record of successful permanent installations for 47 years. Gives lowest finished plaster cost of any metal lath; exceptionally rigid, easy to handle. Excellent, used with wood construction or over steel channels (see pages 4 and 5), it also may be used as reinforcement for light slab construction (see page 6) or applied directly over old ceilings (see page 14).

Bostwick Channelform Lath

The old reliable "Truss-Loop" Lath, with a ¾-in. channel shape formed every ¾ inches running parallel the full length of the sheet, Bostwick Channelform Lath is specially designed and manufactured for use as reinforcement in light slab construction (see page 6). Characteristics: great stiffness and rigidity, giving high supporting strength, preventing waste of concrete, and retaining grout.

Bostwick Junior Expanded Lath

A general purpose lath, this is a small mesh ($\frac{5}{16}$ in.) lath of the diamond type. Good plaster keying qualities, economical, easy to handle. Unexcelled for use in 2-in. partition work. Furnished with an offset or crimp, it makes an ideal self-furring lath. Several weights (see page 7).

Bostwick Boss-Rib Metal Lath

In this one lath are combined the qualities of a flat rib type of lath and a small mesh expanded lath. Economical, rigid, a plaster saver, it is a self-furring type, ideal for all usual purposes. In several weights (see page 8).

Bostwick Vee-Rib Metal Lath

A standard flat-rib expanded metal lath. Unusually stiff for a flat-rib lath, it is very economical to plaster. In several weights (see page 9).

Bostwick Rib Expanded Lath—⅜-In. and ¾-In. Rib

Preferred on wide spacings, the Bostwick Rib Expanded Lath has great rigidity. Particularly suited for reinforcement in floor construction or in suspended ceilings. We do not recommend the ¾-in. Rib for plaster base. Two sizes, a variety of weights (see page 9).

METAL LATH ACCESSORIES—Page 14

Bostwick Corner Bead

Bostwick offers all types of corner bead—Truss-Wing, Expanded, Bull Nose, Wide Flange and Scalloped. Truss-Wing offers exceptional qualities of rigidity and workability. (See photographs on page 14).

Bostwick Picture Molding

Invisible except for hook opening when installed, Bostwick Picture Molding is a simple, easy-to-handle molding for use in all types of buildings (see page 14).

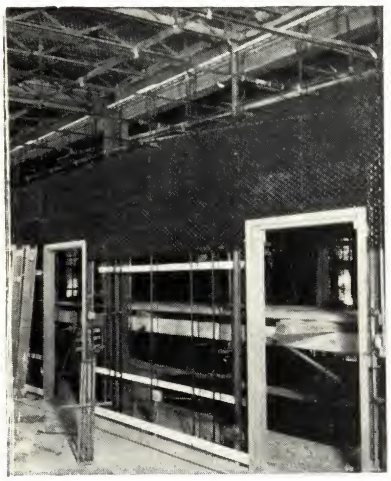
Metal Base Bead

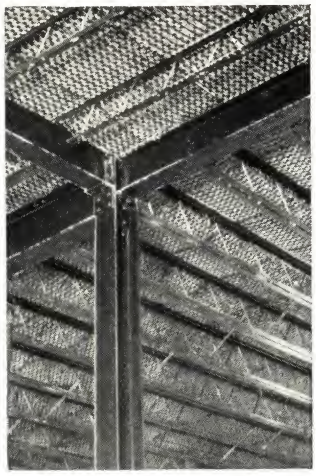
Efficient for heavy service or uneven grounds, firm holding power, true alignment. A typically dependable Bostwick product (see page 14).

Bostwick Wall Plug

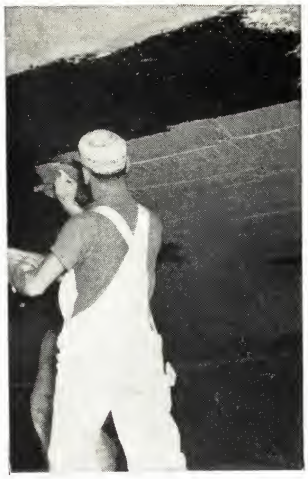
The ideal device for attaching interior trim to masonry walls. Supports weight without flattening, holds nails permanently (see page 14).

A standard specification for all Federal Buildings under Supervising Architect of the U. S. Treasury Department.





Under side of Bostwick Channelform Floor Slab Reinforcement after pouring



Plastering ceiling over Super-Bostwick "Truss-Loop" Lath

BOSTWICK STEEL STUDS Pages 10 to 13

Designed Especially for Super-Bostwick Partition Work

Bostwick offers a welded steel stud which, installed with Super-Bostwick "Truss-Loop" Lath, forms an unexcelled partition system (see below). The stud is made up of cold rolled 16-gauge steel angles, welded back to back, with horizontal flats ladder fashion, welded to the angles. The studs are easy to erect and form a rigid, permanent, economical partition frame.

Advantages of the Stud

The Bostwick Steel Stud is heavier than any comparable product—800 lbs. per 1000 ft. This makes for superior rigidity. Yet it is economical. Lath may be nailed to the stud, as well as tied. Ground or screed strips may be nailed over the lath.

Workability

Installation of cabinet work, wainscoting, blackboards, etc., is facilitated by the use of Bostwick Steel Studs, as the fixtures may be nailed directly to the studs. Thus the Bostwick Stud combines the adaptability of a wood stud with the unquestioned advantages of steel.

The open space inside the partition wall greatly simplifies installation of pipes, conduits and wiring.

BOSTWICK SYSTEM PARTITIONS Pages 11 to 13

Gives True Surface Ease of Erection

The combination of Bostwick Steel Studs and Super-Bostwick "Truss-Loop" Lath forms a partition system that is straight in alignment, economical, firesafe and permanent. All finished surfaces will be true and exceptionally free from cracks and strain. Exceptionally high structural strength.

Erection is simple in the extreme, the lath and studs being mutually workable and adaptable.

Has Sound-Deadening Qualities

The completed partition is considerably more effective in deadening sound than a wood stud or masonry partition of equal thickness. And its open-web construction makes it easy to install insulation for special requirements.

Wide Field of Use

In all high-grade structures Bostwick System Partitions offer incomparable advantages. Smooth, rigid, true walls; great rigidity; ease of installation, moderate cost. For a large class of commercial, school, apartment and public structures, the system solves the partition problem more advantageously than it has ever been solved before.

BOSTWICK OFFERS YOU THE MOST COMPLETE LINE

Bostwick offers the architect a metal lath to meet every lathing requirement and a complete line of accessories for every type of installation. Among these are included (a) backing and reinforcement of plaster for interior walls and ceilings, (b) for exterior stucco, (c) reinforcement and centering of light concrete floors and roof slabs, (d) cement reinforcement for tile, marble and other special interior treatments, (e) support and reinforcement of 2-in. partitions, as well as steel studs for hollow partitions, (f) for drop ceiling construction, (g) fire resisting treatment at danger points in wood construction, (h) crack resistance in the angles of wood-lathed walls and ceilings, (i) fire resisting reinforcement for concrete around steel members in steel construction.

An outstanding firm, offering a complete line of products, that have been thoroughly tested through the years.

PARTIAL LIST OF RECENT Bostwick MATERIALS INSTALLATIONS

The Tides Hotel, Miami, Fla.—Murray L. Dixon, Archt., Miami, Fla. Profert-Wien, Constr. Co., Miami, Fla.

Apartment Bldg. Meridian St., Indianapolis, Ind.—E. G. Bauer & Son, Gen'l Contr.

Court House, Elizabethtown, Ky.—Thos. J. Nolan, Archt., Louisville, Ky.

Auditorium, Atlantic City, N. J.—Lockwood, Greene Engineers, Inc., Archts., New York City. M. B. Markland, Gen'l Contrs., Atlantic City, N. J.

Steel Pier, Atlantic City, N. J.—Christopher Clift, Archt., Atlantic City, N. J. Wm. F. Koelle, Archt., Philadelphia, Pa. Seward G. Dobbins, Archt., Ocean City, N. J. John Allen, Gen'l Contr., Woodbury, N. J.

C. Fred Johnson School, Johnson City, N. Y.—Walter H. Whitlock, Archt., Binghamton, N. Y. Benjamin Klein, Gen'l Contr. J. Frank Parsons, Plst. Contr.

Library Addition and Pharmacy Bldg., Ohio State University, Columbus, Ohio—R. H. Evans Company, Gen'l Contrs.

Court House, Fremont, Ohio—C. H. Shively, Archt. Jacob Swint, Plst. Contr. Steinle-Wolf, Gen'l Contrs.

Phoebe Deaconess Home, Allentown, Pa.—W. H. Gangewere & Co., Gen'l Contrs.

Fountain Hill School Bldg., Bethlehem, Pa.—Lovelace & Spillman, Archts., Bethlehem, Pa. M. E. Fulmer, Gen'l Contr. Duggan & Marcon, Inc., Plst. Contr.

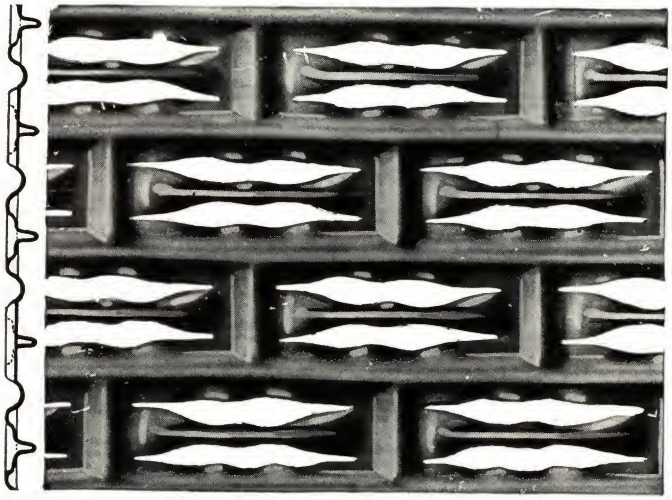
Hooker-Fulton Bldg., Bradford, Pa.—Lawrie & Green, Archts., Harrisburg, Pa.

Three School Jobs, Bradford, Pa.—Frederick A. Fensel, Archt.

Many U. S. Post Offiices, including:

New Castle, Dela.	Lake Placid, N. Y.
Farmington, Me.	Ambridge, Pa.
Dover, N. J.	Orange, Va.
Goshen, N. Y.	Keyser, W. Va.

THE *Improved* SUPER-BOSTWICK "TRUSS-LOOP" LATH



Size and Weight—Super-Bostwick "Truss-Loop" Lath comes in standard 24x96-in. steel sheets. Weight: 4.5 lbs. per sq. yd. painted; 5.25 lbs. per sq. yd. galvanized. Nine sheets to the bundle, equivalent to 16 sq. yds.

This is the original Bostwick Lath, improved to a point where it is in a class by itself as an all-purpose metal lath. Longitudinal ribs and transverse corrugations give it extraordinary stiffness both in length and width. It has maximum reinforcement qualities and gives the lowest finished plaster cost of any permanent fireproof plaster base.

Super-Bostwick "Truss-Loop" has long since established itself as the ideal lath, whether used with wood construction or applied over metal channels.

Ease of installation is an important factor. "Truss-Loop" can be nailed or wired in minimum time. Stretching is unnecessary. The lath is exceptionally rigid under the plasterer's trowel even when supports are as wide spaced as 24 in. on centers. Plastering time is reduced, as scratch and brown coats can be applied without moving the scaffold.

The distinctive formation of Super-Bostwick "Truss-Loop" Lath gives the plaster a triple key, further adding to the rigidity of the finished wall.

Specifications — Bostwick has complete specifications available for all installations of Super-Bostwick "Truss-Loop" Lath. Architects are invited to write for them.

For Super-Bostwick "Truss-Loop" used in light slab construction see page 6.

For application over old ceilings see page 14.

6 PRACTICAL ADVANTAGES of Super-Bostwick "Truss-Loop" Lath

(1) Saves Labor, because it is so rigid and stiff that the plaster sticks on first application; each sheet can be easily handled by one man; no deflection in the lath surface which would necessitate retroweling.

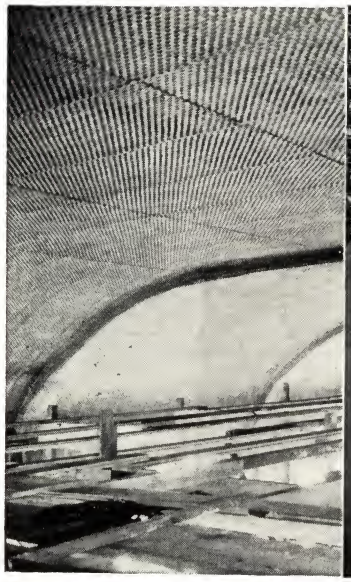
(2) Saves Yardage, of lath by a nesting rib which automatically laps the edge of each sheet, thus eliminating waste of lath by over-lapping.

(3) Saves Furring Strips, by placing loops inward, which gives space for the plaster key.

(4) Saves Lumber, because its strength permits working wider centers—from 12 or 16-in. to 24-in., thus requiring fewer studs; lath will not sag with the weight of mortar and is exceptionally rigid under the trowel.

(5) Saves Plaster, because the triple-bond plaster-key grips all the mortar, allowing no waste.

(6) Saves Time, because it has a flat non-giving surface, thus making for faster troweling, and the scratch and brown coats can be applied from the same scaffold.

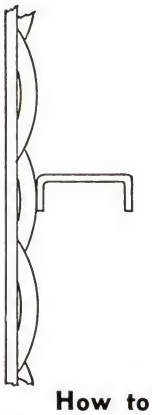


Auditorium Interior—Lath is Super-Bostwick "Truss-Loop" Lath

Super-Bostwick "Truss-Loop" Lath is the ideal plaster base because it does not yield under the trowel; hence, there is no vibration or displacement of the plaster as he proceeds from bay to bay

Super-Bostwick "Truss-Loop" Lath properly erected and plastered makes a fire-resisting treatment for steel pillars

Directions for Applying Super-Bostwick "Truss-Loop" Lath



Apply Over Specified Centers

Super-Bostwick "Truss-Loop" may be applied over 12, 16, 19 or 24-in. centers, as specified by the architect. Note that Super-Bostwick is suitable for application over wider spacings than most laths.

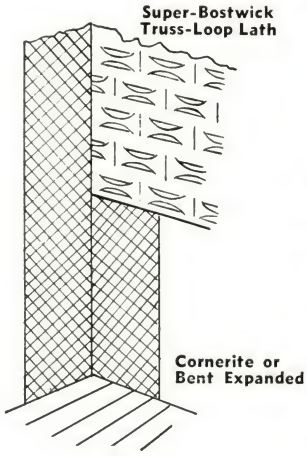
Place Loops Against Supporting Channels

Because of Super-Bostwick's self-furring qualities and ease in wiring to channels, we recommend that the lath be installed with loops against the supports.

Bostwick Lath on Jamestown, N. Y., school. More than 43,000 yards of Super-Bostwick "Truss-Loop" Lath and Bostwick Channelform Lath were used for ceilings, walls, and floor reinforcement in this building

How to Protect Interior Angles

The corner should first be "shoed" with either Bostwick Cornerite or with expanded lath bent in an angle running lengthwise of the sheet. After the "shoe" is applied, it is satisfactory practice to butt the lath in all interior angles.



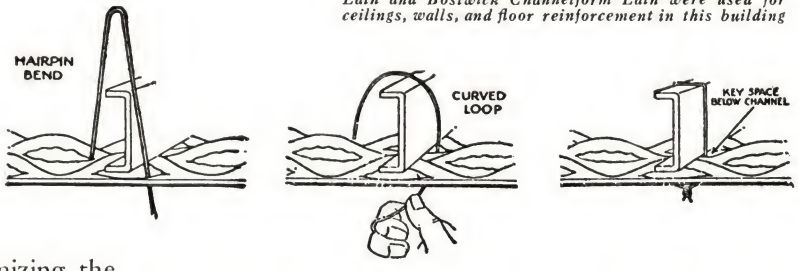
Use Least Possible Overlap

At the side of the sheet, lap only the width of ⅛-in. nesting rib. At ends, overlap just enough for secure fastening.

Break Joints by Staggering Sheets

Start every other course with a half sheet, so that one vertical joint does not come under another.

Nail with 1-¼-in. flat-head roofing nails or 6 penny nails every 4 in. across the lath.



Fasten Wiring with "Truss-Loops" Against the Channel

It is important to apply the sheets with loops against the channels for two reasons: (1) This furrs out the lath from the channel, leaving key space for plaster and minimizing the danger of cracks in the channel line. (2) In this position, the wire is naturally guided down through an opening in the lath, whether it is inserted loop first in the form of a hairpin bend or end first as a curving loop.

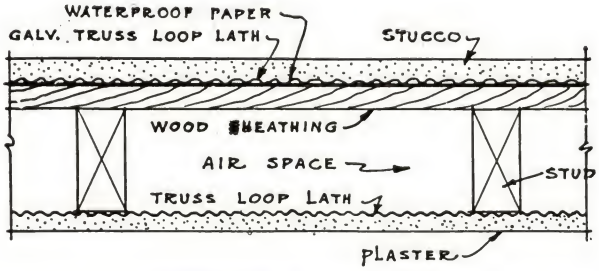
Plaster Grounds—Super - Bostwick "Truss - Loop" Lath may be plastered in any depths of grounds ordinarily used with other lath.

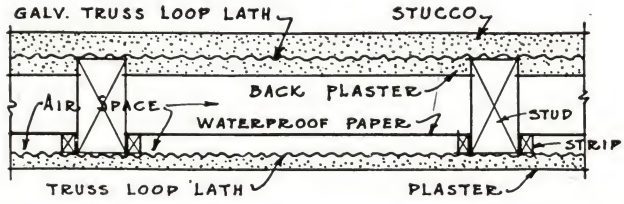
Doubling Back—This lath is well adapted to doubling back with brown coat before scratch coat is fully set. This saves moving scaffolds and *means harder, better plaster.*

Details of Construction with Wood Sheathing and Back Plaster Lathing

For a plaster base over wood sheathing "Truss-Loop" is ideal because furring is unnecessary. By applying the lath with the loops against the sheathing the lath is furred out, leaving space for a strong plaster key.

For Back Plastering—"Truss-Loop" adds its inherent structural strength and braces the structure. For construction of a garage, or similar type, the studs can be spaced 24" O. C. and "Truss-Loop" nailed and plastered both sides, giving a strong fire-resistant wall.





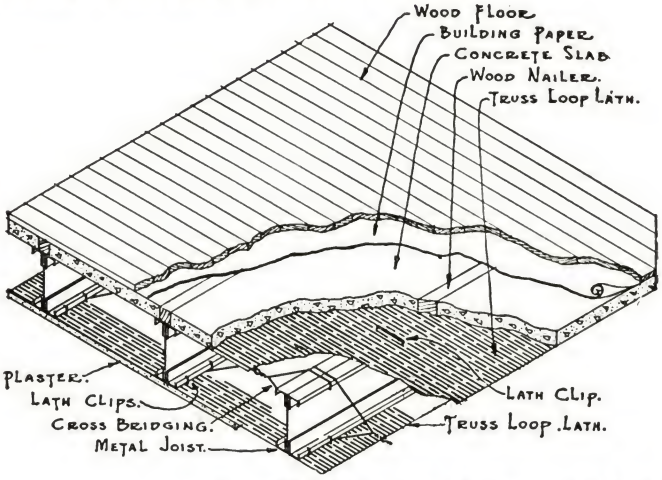
BOSTWICK LATH FOR LIGHT SLAB CONSTRUCTION

Exhaustive tests (see below) both in the laboratory and on actual installations have proved the desirability of light slab construction with metal lath used as reinforcement and centering. Thousands of completely satisfactory installations attest to the fact that this is an entirely practical method for light slab work. Bostwick offers lath and accessories specially adapted to this purpose.

SUPER-BOSTWICK "TRUSS-LOOP" LATH
For Light Slab Construction

The Super-Bostwick principle of lath fabrication has had notable success in providing centering and reinforcement for light slab construction. Early installations of this type were made with standard Bostwick "Truss-Loop" Lath, identical with that used for a plaster base. A rigid series of tests by the Building Department of New York City resulted in approval for this lath in slab construction within the boundaries of Greater New York and it has been widely used in other localities, with uniformly good results.

A test of Bostwick "Truss-Loop" Lath as floor lath supported on 2-ft. centers in a 2-in. concrete slab was made at Carnegie Institute. A load of 1200 lbs. per sq. ft. was applied—a test far beyond the reasonable requirements for the slab. Examination showed no cracks, slipping or deflection.



Clipping lath to joist with Special Bostwick Clip Tool

Under side of a section of Bostwick Channelform in place

Approved method of wheeling and spreading of concrete from dumping board

BOSTWICK CHANNELFORM LATH
Specially Designed for Floor Reinforcement

Bostwick Channelform Lath is furnished in standard weights of 4.5 lb., 6.0 lb., and 6.75 lb. per sq. yd.

Bostwick Channelform Lath is an improvement on Super-Bostwick "Truss-Loop" for floor reinforcement purposes. It is identical except that the sheet is offset laterally, so that every other longitudinal section is raised to give it a channel-like section which further stiffens the sheet.

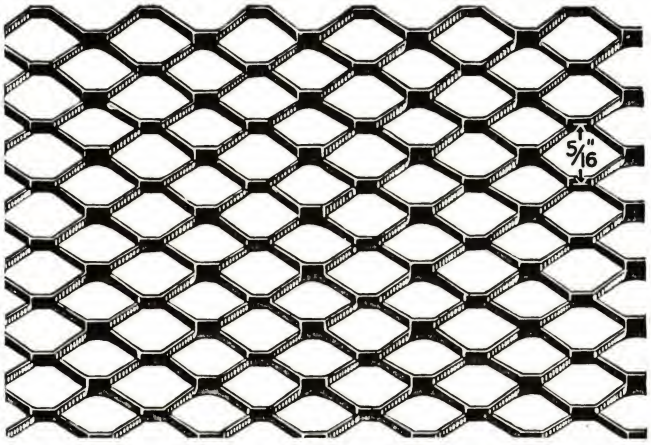
Bostwick Channelform, the stiffest lath for floor slab construction, supports the green concrete during the setting period with minimum deflection. Channelform's evenly distributed resistance withstands the strains incident to construction without buckling or abnormal deflection. Workmen will occasionally step on the floor between joists. In the case of less rigid laths, these strains cause buckling or marked deflection, but with Channelform their effect is scarcely noticeable.

In common with Super-Bostwick "Truss-Loop," Channelform retains all but a small percentage of grout in the concrete. Grout losses seriously weaken the floor slab, as the seepage carries with it a high percentage of the cement. The uniformly high supporting strength shown in test slabs over Super-Bostwick "Truss-Loop" or Channelform is due, in large measure to the fact that the concrete has not been impaired by these losses.

BOSTWICK JUNIOR EXPANDED METAL LATH

A Small [5/16 In.] Metal Lath of the Diamond Pattern

The $\frac{5}{16}$-in. mesh size of Bostwick Junior Expanded Lath is the scientifically correct size for a diamond pattern lath. The meshes are large enough to grip the plaster firmly and form an even, rigid wall, yet small enough to provide all the special advantages of a small-mesh lath. Bostwick Junior is unexcelled as a diamond-type, small-mesh lath.



Sizes and Weights

Bostwick Junior Lath is furnished in standard 24 x 96-in. sheets, nine sheets to the bundle, equivalent to 16 sq. yds. Weights: 2.2 lb., 2.5 lb., 3.0 lb., 3.4 lb. in painted steel; 2.5 lb., 3.4 lb. in galvanized; 3.0 lb., 3.4 lb. in copper alloy, and 3.4 lb. in Toncan metal or Armco Ingot iron.

A General Purpose Lath

Bostwick Junior Expanded Metal Lath is a general purpose lath, ideal for a large proportion of plastering jobs. It is particularly suited for use in partitions, suspended ceilings, coverwork and 2-in. non-bearing plaster partitions.

A small-mesh lath of the diamond type, it possesses great advantages over the older types of diamond-mesh laths. Its 3,000 more meshes to the sheet plus the $\frac{5}{16}$-in. mesh size gives it good plaster keying qualities.

Ideally Suited for 2-In. Partitions

Bostwick Junior Expanded Lath has qualities which make it the outstanding lath for economical 2-in. plaster partition work. Such partitions are staunch and have a high rating for sound resistance. Their outstanding practical advantage, aside from moderate first cost, is their saving of floor area, amounting in most cases, to one square foot per five lineal feet of partition.

Since the lateral resistance of the lath is not highly important in this type of partition, economy usually dictates the use of the lightest weight of Bostwick Junior, weighing 2.2 lbs. per yd. Customary practice is to suspend it on ¾-in. channels, spaced 12 in. on centers, with an anchor channel screwed to the door buck, where a wooden buck is used. Skimping the thickness of the partition to conform with the thickness of a planed 2 x 4 in. buck is not recommended.

Post Office, Warren, O., lathed throughout with Bostwick Niles Junior Expanded Lath. Architects, Keich & O'Brien

This construction is widely accepted in commercial and apartment construction and has an increasing field in home building. The fact that it offers no recess for flames is an element of fire safety.

Bostwick Junior as a Corrugated Lath

Bostwick Junior can be furnished with an offset or crimp, making it an ideal corrugated or self-furring lath, for work over wide bearings, or over sheathing or other flat surfaces.

Bostwick Niles Expanded Lath and Channel erected for 2" plaster partition in the Film Exchange Building, Cleveland, O.

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5

BOSTWICK BOSS-RIB METAL LATH

A Small Mesh Lath of the Flat Rib Expanded Type

A Superior Small Mesh Lath

Bostwick Boss-Rib Metal Lath is a superior, small-mesh, flat-rib type of expanded lath. Made on specially designed Bostwick equipment, it is noted for its accurate fabrication and correct distribution of metal to give maximum strength and stiffness.

Sizes and Weights

Bostwick Boss-Rib comes in standard 24x96-in. sheets, nine sheets to the bundle, equivalent to 16 sq. yds. Weights: 2.75, 3.0, 3.4 and 4.0 lb. painted steel; 3.4 lb. in copper bearing or galvanized and 3.4 lb. in Toncan metal or Armco Ingot Iron.

Boss-Rib is More Than a Flat-Rib Lath

Boss-Rib is classified as a flat rib lath but its longitudinal ribs give more than ordinary stiffness due to their oblique position. It has true plaster saving qualities as the ribs so placed tend to spread the mortar instead of cutting it. In spite of the space taken by the ribs, it has between 4 and 5 per cent more openings than junior mesh and the meshes are correspondingly smaller.

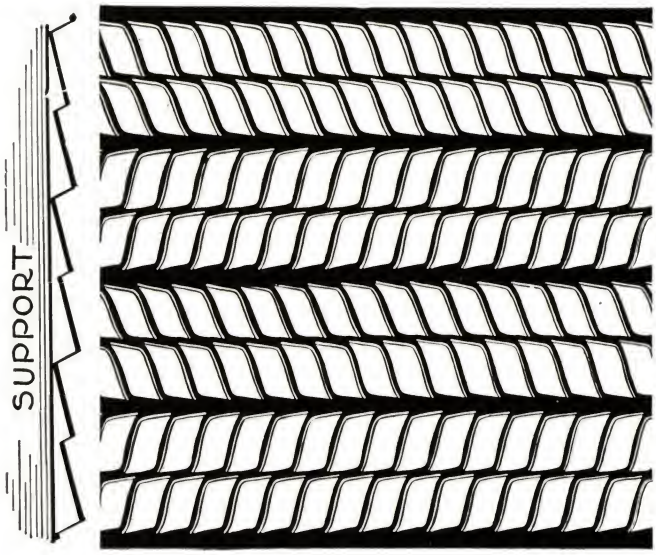
Fills Every Requirements as an Expanded Metal Lath

Boss-Rib will be accepted where specifications call for expanded lath. Due to the fact that it has a greater number of openings, or keys, per yd. than any other expanded lath, it combines the advantages of the smallest mesh lath with the features of a rib lath.

Ornamental ceiling in Franklin Institute, Philadelphia, plastered over Bostwick Boss-Rib Metal Lath. (Below) An exterior view of the Franklin Institute. Architect, John T. Windrain

An Ideal General Purpose Lath

Boss-Rib is the ideal general purpose lath—economical, rigid and a substantial plaster saver. Its ease of handling makes it a favorite with workmen. In a wide choice of weights and materials, it is adaptable to almost every lathing requirement.



Boss-Rib is Self-Furring

The flat rib's oblique angle to the plane of the sheet makes Boss-Rib a self-furring lath, suitable for application over any flat surface, such as the replastering of ceilings. This feature also enables it to give a better bond over studs, beams, channels or other supports.

The Mesh Design Prevents Running and Sagging of Plaster

The projecting rib of Boss-Rib Metal Lath acts as a strike-off, helping to equalize the application of the scratch coat over various parts of the surface. The rib acts as a shelf for the wet plaster and prevents running or sagging. Due to the angle of the ribs and the cross strands the plaster curls around and imbeds them instead of dropping on the reverse side.

Its Rigidity Prevents Bellying and Buckling

The sheets of Boss-Rib are so stiff one man can easily handle and erect them. Their rigidity makes stretching unnecessary and prevents bellying and buckling between supports. Frequent testimony reports that 2.75 lb. Boss-Rib is more rigid in construction than 3.4 expanded lath. Selvage edges interlock, saving time and material in side laps.

Close-Meshing Qualities Simplify Storage Problems

Boss-Rib nests closely in stock and takes up comparatively little room in storage. Sheets are uniform in size. Bundles can be easily handled by one man.

BOSTWICK RIB EXPANDED METAL LATH—3/8" and 3/4" RIB

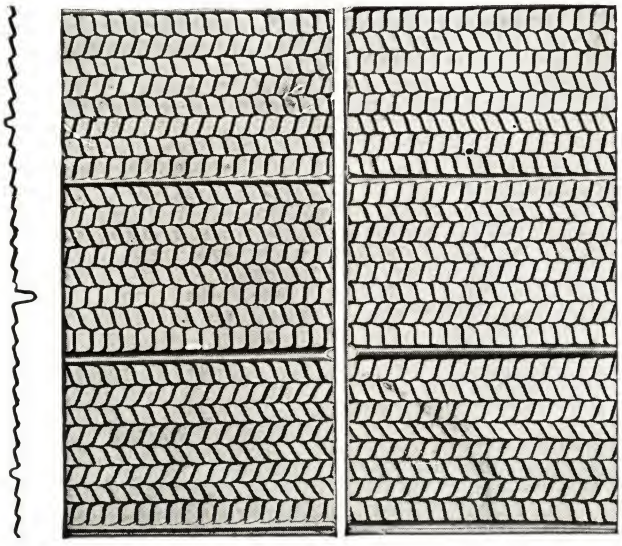
The demand for an expanded lath with augmented rigidity is supplied in Bostwick Rib Expanded Laths. Leaders among products of their types, they may be relied upon for correctly rectangular sheets of uniform fabrication, effectively stiffened by true, straight ribs.

Bostwick 3/8-in. Rib Expanded Lath is preferred as a plaster base on wide spacings and as a stiff reinforcement in floor and ceiling construction with steel joists. Side ribs may be nested forming an economical but effective overlap. Much used as a floor reinforcement and likewise for suspended ceilings, where its rib not only increases stiffness but furrs out the lath from the channel, improving the plaster key.

Bostwick 3/4-in. Rib Lath has ribs spaced 4.8 in. apart, 6 to the sheet and is used mainly as floor slab reinforcement. We do not recommend 3/4-in. Rib as a plaster base.

Sizes and Weights

The 3/8-in. Rib is furnished in standard size sheets in 3.0 lb., 3.4 lb., and 4.0 lb. per sq: yd. The 3/4-in. Rib is furnished in .50 lb., .60 lb., .75 lb. per sq. ft.



BOSTWICK VEE-RIB METAL LATH

A Superior Flat-Rib Lath with Extra Stiffness

A Flat-Rib Lath, of superior stiffness with accurate edges that minimize overlap and which can be plastered more economically than any other lath except Bostwick "Truss-Loop" or Boss-Rib Metal Lath.

Sizes and Weights

Bostwick Vee-Rib Lath is manufactured in four weights —2.75, 3.0, 3.4 and 4.0 lb. painted and 3.4 lb. in copper bearing or galvanized. Sheets are 24 x 96-in. in size, or 1 7/9 yds. They are packed 9 sheets in a bundle or 16 sq. yds.

Distinctive Corrugations Produce Extra Rigidity

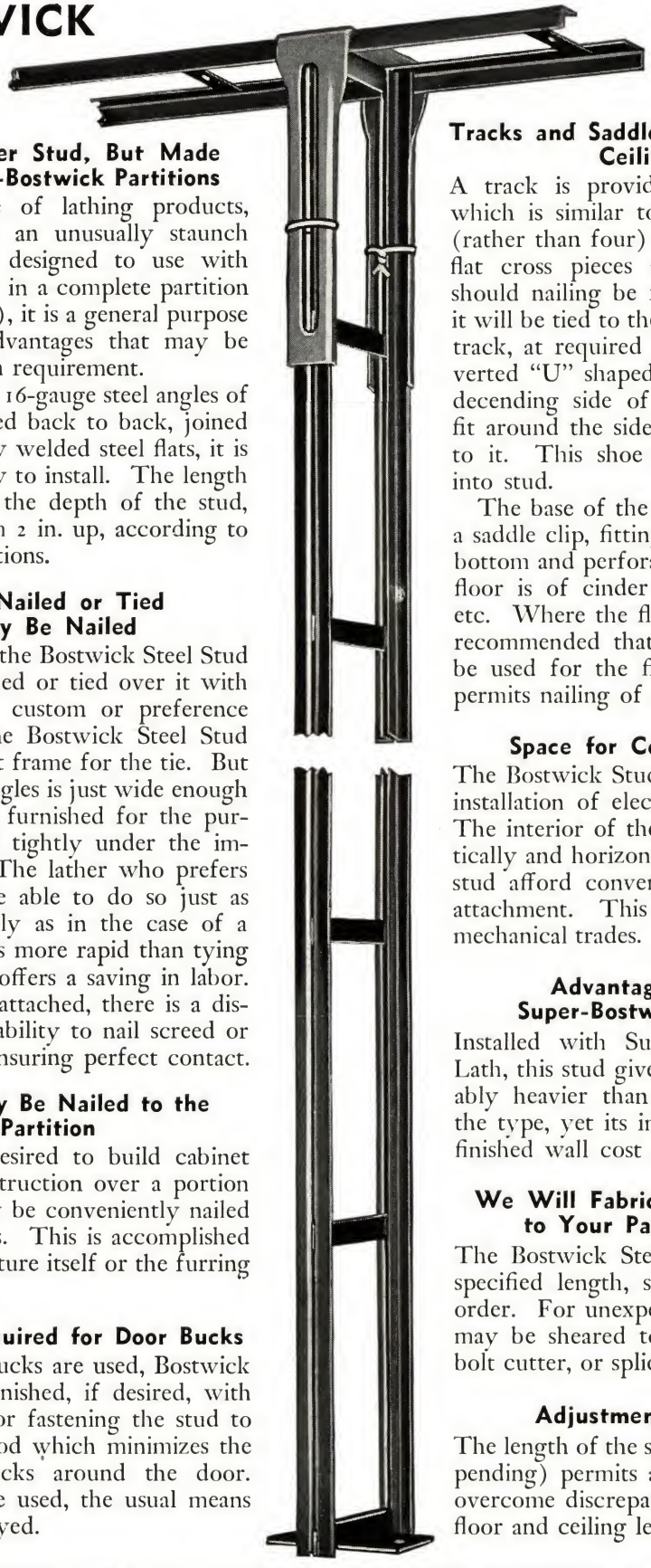
The corrugations of Bostwick Vee-Rib, shown in the profile, give the lath a stiffness not found in most flat ribs. The vertical position of the intermediate rib, as well as the vanes of metal between ribs, improve the plaster holding quality.

Advantageous in Wood Construction

Bostwick Vee-Rib Lath offers every advantage in wood construction, being easy to handle, easy to nail, self-furring over flat surfaces and adapted to moderately wide spacing of supports.

SUPER Bostwick FIREPROOF PARTITIONS

THE BOSTWICK STEEL STUD



A General Character Stud, But Made Especially for Super-Bostwick Partitions

Supplementing its line of lathing products, Bostwick manufactures an unusually staunch steel stud. Especially designed to use with Bostwick "Truss-Loop" in a complete partition system (see facing page), it is a general purpose stud of outstanding advantages that may be adapted to any partition requirement.

Made of four upright 16-gauge steel angles of ½x⅜ in. section, welded back to back, joined together horizontally by welded steel flats, it is extremely rigid and easy to install. The length of the flats determines the depth of the stud, which is furnished from 2 in. up, according to the architect's specifications.

Lath Can Be Nailed or Tied Grounds May Be Nailed

A distinctive feature of the Bostwick Steel Stud is that lath may be nailed or tied over it with equal facility. Where custom or preference calls for a wire tie, the Bostwick Steel Stud offers a firm, convenient frame for the tie. But the cleft between the angles is just wide enough to admit a special nail, furnished for the purpose, which is wedged tightly under the impact of the hammer. The lather who prefers to nail the lath will be able to do so just as conveniently and rapidly as in the case of a wooden stud. Nailing is more rapid than tying and the stud therefore offers a saving in labor.

However the lath is attached, there is a distinct advantage in the ability to nail screed or ground strips to stud, insuring perfect contact.

Cabinet Work May Be Nailed to the Stud or Partition

In cases where it is desired to build cabinet work against stud construction over a portion of the wall area, it may be conveniently nailed to Bostwick Steel Studs. This is accomplished either by nailing the fixture itself or the furring to which it is attached.

No Special Studs Required for Door Bucks

Where wooden door bucks are used, Bostwick Steel Studs can be furnished, if desired, with their flats punctured for fastening the stud to the door buck, a method which minimizes the danger of plaster cracks around the door. Where metal bucks are used, the usual means of attachment is employed.

Tracks and Saddle Clips for Attachment at Ceiling and Floor

A track is provided for ceiling attachment, which is similar to the stud, except that two (rather than four) angles are employed and its flat cross pieces are perforated for nailing, should nailing be required. In most instances it will be tied to the ceiling channels. Over this track, at required spacing, is suspended an inverted "U" shaped shoe (patent pending), the decending side of which are channels which fit around the sides of the stud and are wired to it. This shoe is slotted to enable nailing into stud.

The base of the stud is secured by means of a saddle clip, fitting over the cross piece at the bottom and perforated for stub nails, where the floor is of cinder concrete, pre-cast gypsum, etc. Where the floor is of hard concrete, it is recommended that the ceiling track and shoe be used for the floor. The slot in the shoe permits nailing of base grounds.

Space for Conduits and Plumbing

The Bostwick Stud offers ideal freedom in the installation of electric conduits and plumbing. The interior of the partition is open both vertically and horizontally. Cross members of the stud afford convenient means of support and attachment. This greatly facilitates work of mechanical trades.

Advantages Installed With Super-Bostwick Truss-Loop Lath

Installed with Super-Bostwick "Truss-Loop" Lath, this stud gives a plaster backing considerably heavier than comparable installations of the type, yet its incidental economies give it a finished wall cost lower than competitors.

We Will Fabricate Bostwick Steel Stud to Your Particular Requirement

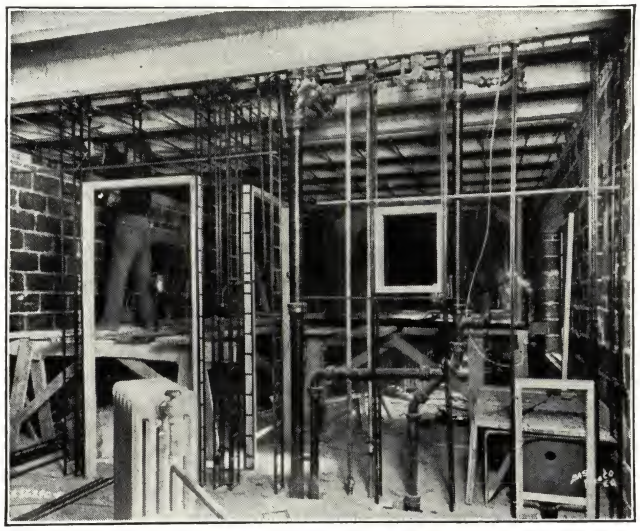
The Bostwick Steel Stud is furnished in any specified length, specially fabricated for each order. For unexpected conditions, however, it may be sheared to the desired length with a bolt cutter, or spliced by tying with wire.

Adjustment for Uneven Floors

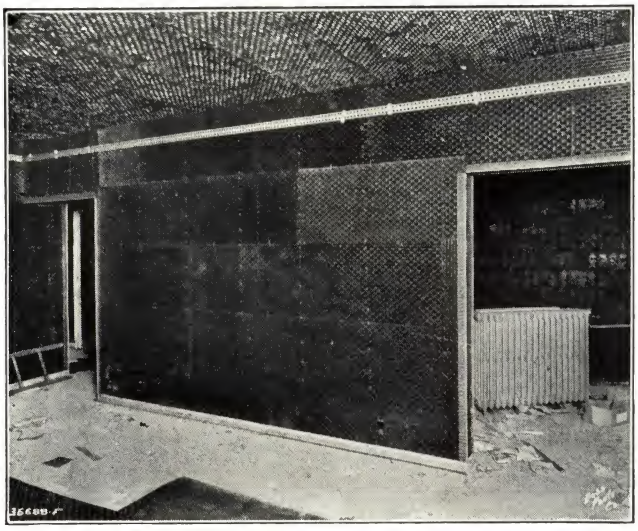
The length of the special Bostwick Shoe (patent pending) permits an adjustment up to 3 in. to overcome discrepancy in length due to uneven floor and ceiling levels.

BOSTWICK SYSTEM PARTITIONS

MADE FROM BOSTWICK STEEL STUD AND SUPER-BOSTWICK "TRUSS-LOOP" LATH



Note convenient disposal of pipe and ducts



Sharp eyes will see nail heads in this view

Area shown above after plastering

True Surfaces—Easy Erection—Fire Resistance

The combination of the Bostwick Steel Stud and Super-Bostwick "Truss-Loop" Lath provides a partition system of unquestioned superiority. Its finished surfaces will be accurate, rigid, and exceptionally free from crack or strain. Both the stud and lath are mutually adaptable and therefore easy to install. The finished partition is fire resistant, and has been accepted for use in fire-zones of many cities.

Specially Fabricated for Every Installation

The Bostwick System Partition is equipped only with Super-Bostwick "Truss-Loop" Lath and is specially fabricated for all installations, with view to actual lengths and wall thicknesses required. However, where required, the stud may be readily cut with a bolt cutter, or may be spliced with wire ties.

Comparisons Are Favorable to Bostwick Partitions

Compared with wood framed partitions, the Bostwick System avoids warping strains which are a potent cause of plaster cracks. Compared with tile partitions, it saves considerable floor load and deadens sound more effectively. Compared with either, it affords a greater freedom of arrangement and ease of erection for ducts, pipes and conduits.

No metal lath product has as long a record of successful installations as has Bostwick "Truss-Loop." One of the earliest of metal laths, it is the oldest in continuous use. Its employment in any project is the ultimate assurance of good faith toward the owner and the public.

APPROVED ERECTION METHODS

For the best method of installation, there are seven definite steps, to be followed in numerical order.

(1) The floor layout should first be made in accordance with the architect's plans.

(2) The ceiling layout should then be determined by plumbing in accordance with the floor layout.

(3) The ceiling clips or hangers should then be placed over sections of ceiling track and properly spaced, in advance of their erection.

(4) Ceiling track is then erected, being attached to ceiling furring, steel joists, concrete joists or whatever construction is afforded.

(5) The floor layout should then be marked for the spacing of studs.

(6) Studs should then be inserted and securely wired to the ceiling clips.

(7) The floor clip should then be inserted and securely nailed to the floor. If the floor is of concrete, a concrete stub nail must be used.

Three stages in the erection of Bostwick System Partitions at Bauer Apartments, Indianapolis, Ind.

BOSTWICK SYSTEM PARTITIONS—Cont.

Lathing

Super-Bostwick "Truss-Loop" Lath shall be wired or nailed to the steel studs, by using a special Bostwick nail. These nails will be shipped with the studs.

Lath Position

Super-Bostwick "Truss-Loop" Lath should always be applied with its elevated trusses against the stud or other support. This position is a better working surface. It saves plaster and gives a better key. When the alternative method of application by tying is used, it is especially important that the "truss loops" be against the stud, since the clefts in the lath form a better guide for the returning end of the wire.

BOSTWICK PARTITIONS ARE ADMIRABLY SUITED FOR DOUBLING BACK OPERATIONS

Because of Super-Bostwick's great rigidity and unique mechanical construction, Bostwick Partitions are ideal for the plastering operation known as doubling back. Much of the economy achieved in their use is due to this practice. It saves time and labor otherwise expended in the removal and re-erection of scaffolds. Moreover, there is every reason to believe that the bond of a brown coat over a moist scratch coat is superior to that in "bone dry" plastering. The resulting plaster crystal is better integrated and the danger of cleavage minimized by doubling back.

Effective Sound-Deadening Qualities

With its ordinary construction, the Bostwick Partition provides more effective sound deadening than wood stud, tile or masonry partitions of equal thickness. However, two methods of increasing the resistance to sound are indicated in the details. In one, the studs are staggered, unconnected. This provides a very satisfactory sound-resisting partition and is recommennded for party walls between apartments, corridor walls, etc. Somewhat more expensive, but much more efficient, is the same partition with a felt blanket erected between studs as detailed.

INSTALLATION METHODS

Ceiling Attachment

Ceiling track consists of two angles, joining by a flat which is punctured for nailing, where nailing is necessary. Over this are spaced the special Bostwick Shoe (patent pending) with channel shaped descending members which fit around the sides of the stud and are wired to it. Its length suffices for adjustment up to 3 in., to take care of unever floor levels.

Floor Attachment

Floor attachment is secured by means of a saddle clip fitting over the lowest cross member, as shown in the drawing. It has holes for nailing to wood or concrete floor. If concrete is very hard, use track as mentioned on page 17.

Internal and External Angles

See the details on facing page showing method of setting studs for both internal and external angles. This arrangement makes a very rigid corner connection.

Door and Other Openings

The attached detail shows method of erecting studs in connection with a door or other opening. By placing the stiffening member (a ¾-in. channel iron) as detailed, the door gains considerable rigidity and ability to resist shocks. No door head cracks have occured, to date, on any Bostwick Stud installation.

SPECIFICATIONS

Steel Studs shall be double angle type as manufactured by The Bostwick Steel Lath Company, Niles, Ohio, or approved equal, and shall weigh not less than 800 lbs. per 1000 lineal feet.

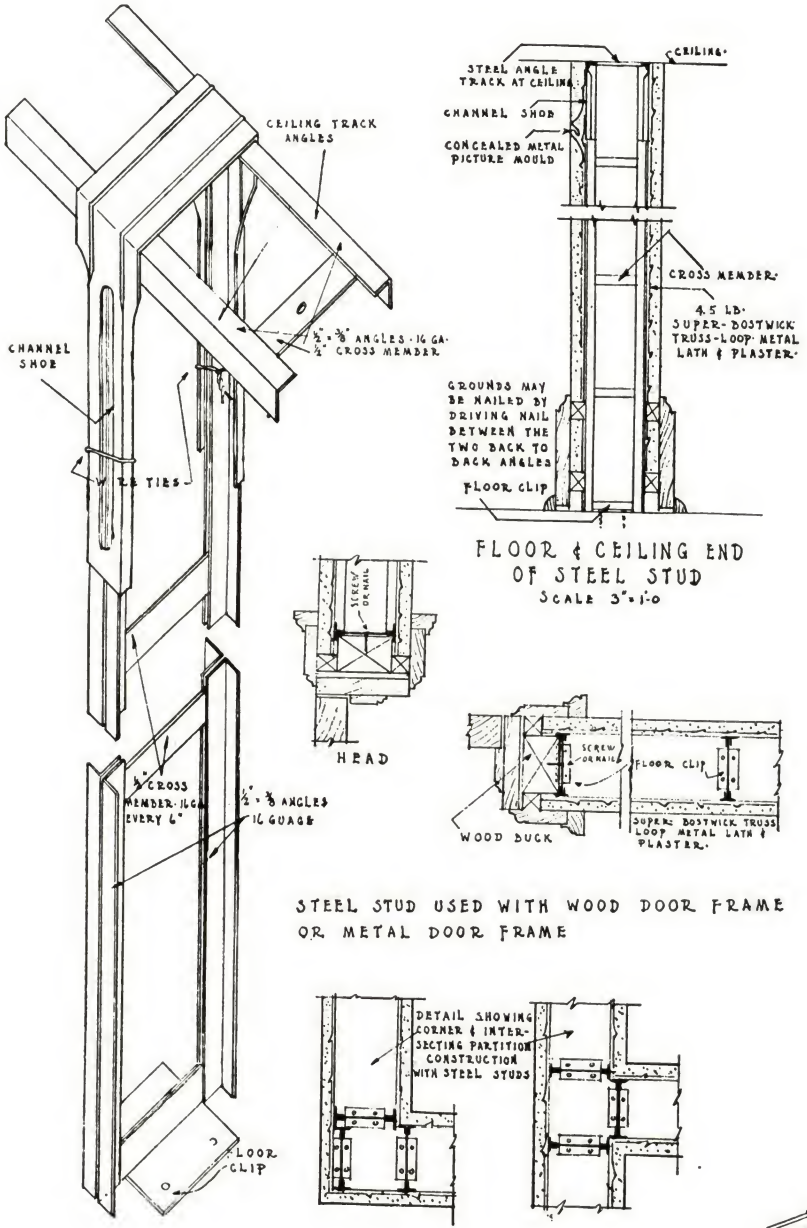
Studs shall be set not over 23¾ in. on centers and lathed both sides with Super-Bostwick "Truss-Loop" Lath, Painted, weighing 4.5 lbs. per sq. yd., except where wide pipe vent spaces are shown on plans, when two sets of studs shall be erected and lathed one side only.

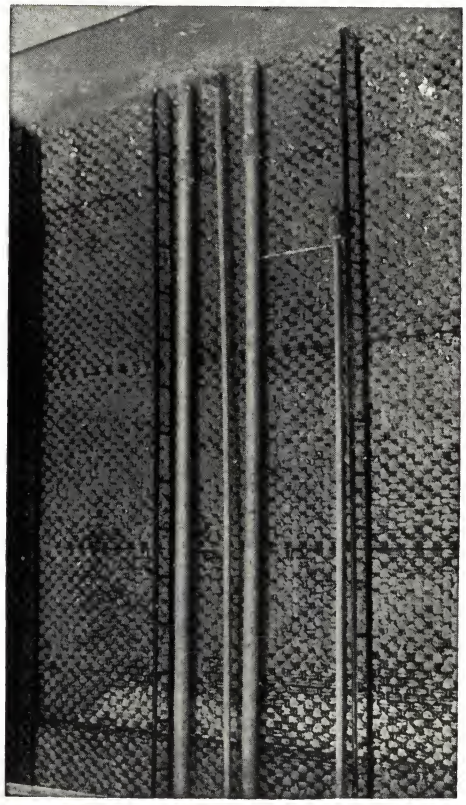
Lath shall be either wired or nailed to studs using nails as furnished by The Bostwick Steel Lath Company.

All vertical and horizontal internal angles should be shoed with Cornerite (strips of Expanded Metal Lath bent at right angles).

Ceiling track and shoes and floor clips shall be used in accordance with manufacturer's details, specifications and directions.

INSTALLATION DETAILS of the Bostwick Steel Stud

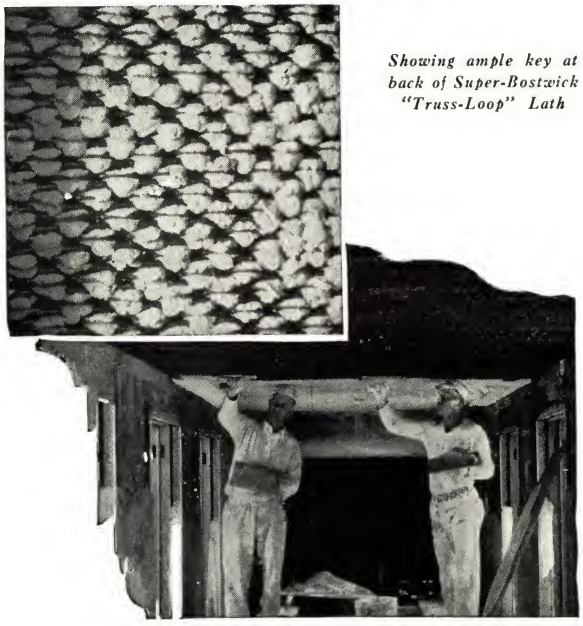




Illustrating the ease with which pipes and conduits are installed in Bostwick Steel Stud Partitions

THE USE OF SUPER-BOSTWICK "TRUSS-LOOP" LATH

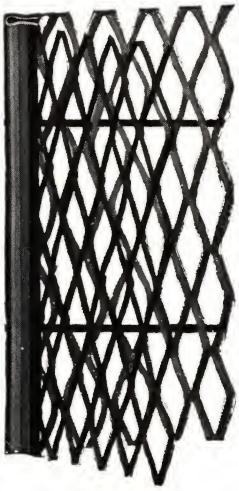
ON OLD CEILINGS



Showing ample key at back of Super-Bostwick "Truss-Loop" Lath

Where old ceilings are in need of repairs, due to cracks, sagging, or falling plaster, the use of Super-Bostwick "Truss-Loop" Lath has notable advantages. The outstanding feature is that it eliminates all need for removing the old plaster. This is important, since the removal of plaster produces a fine, pervasive dust which, in a home or any furnished building, finds its way into food, fabrics and furniture and is often tracked about the premises for weeks. The Bostwick method is to leave the old plaster in place and to cover the ceiling with Super-Bostwick "Truss-Loop" Lath, with trusses against the old surface. It is nailed to the studs with wire nails at least two inches in length. Plaster is applied to the lath in the usual manner. The advantages of Super-Bostwick "Truss-Loop" Lath in this operation are due (1) to its self-furring quality when erected in the manner prescribed, giving ample key for the new plaster and (2) its stiffness which supports and levels any sag in the old plaster, producing a level plastering surface, regardless of the irregularities of the support.

BOSTWICK METAL LATH ACCESSORIES



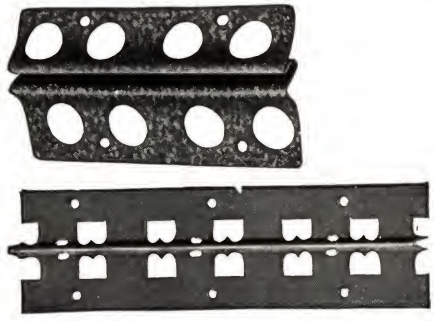
Expanded

Truss-Wing

BOSTWICK CORNER BEAD

Bostwick "Truss-Wing" has earned widespread popularity through its rigidity, true fabrication and certain working qualities which appeal to the craftsman. Stiffness is derived from its corrugated wing. Positions of the "BB" perforations insure keying of plaster close to the bead. Placed as they are in pairs, they facilitate snipping of the wing for curved applications such as arches. Bostwick Expanded, Bull Nose, Wide Flange and Scalloped Corner Bead are standard products acceptable for their specific purposes.

All Bostwick Corner Bead is furnished crated in order to preserve its straightness. Furnished in lengths of 6 ft., 7 ft., 8 ft. 6 in., 9 ft., 10 ft., 11 ft. and 12 ft. The standard package is about 1,000 ft.



METAL BASE BEAD

Especially efficient base bead for heavy service on uneven grounds. Extra plaster keys in the flange increase the holding power and the gymped edge gives a solid nail hold in any surface depressions without changing the lie of the bead. Standard lengths, 8 ft.; shipping weight, 180 lbs. per 1,000 ft.

BOSTWICK WALL PLUG

Approved for all Federal work. An ideal method of attaching interior trim to masonry walls. Made of heavy galvanized stock, the Bostwick Wall Plug is sealed against mortar by closed edges. Supports weight without flattening and everlastingly holds the nails. Lengths, 2⅞ inches; width, 2¼ inches; packed 250 to carton; shipping weight, 25 lbs.

INVISIBLE PICTURE MOLDING

This molding can be used in all types of buildings and applied before plastering. It is invisible when finished, except for hook opening. It can be applied to any plaster base. Comes with straight edge preserved by crating, in 10 ft. lengths. Packed in 1000-ft. bundles, weighing 225 lbs.

SUPER-BOSTWICK "TRUSS-LOOP" LATH

AN IDEAL BACK-UP FOR CERAMIC TILE

Aside from its excellence as a plaster base, Super-Bostwick "Truss-Loop" Lath enjoys preference by hundreds exacting tile appliers as a reinforcement and backing for tile applications. This favor was extended to the original lath in the early nineties and has been strengthened by successive improvements in the product which have produced the Super-Bostwick "Truss-Loop" of today.

An instance of this outspoken preference comes in the form of a letter addressed to Bostwick by Clarence W. McCaulley, when president of the Tile & Mantel Contractors Association, saying, "I desire to advise that it is the opinion of the writer * * * that "Truss-Loop" Metal Lath is the best back for tile on wood construction that is manufactured in this country: and I would go on record as recommending this lath to all architects and owners who desire a high class, permanent installation of tiles."

Requirements—Lath used in the backing of tile must withstand—(1) the impact of the mallet driving tiles into place during installation, and (2) the burden of an unusually heavy application during long years of service, during which any disturbance to the backing is likely to result in cracking at joints.

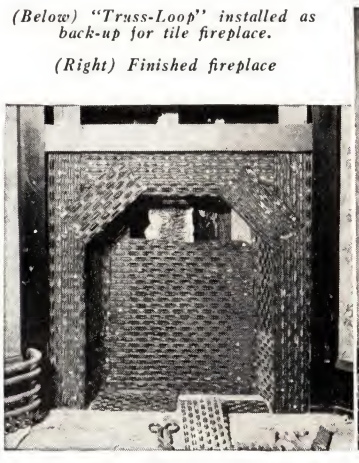
Method of Application—A scratch coat of Portland cement and sand is first applied, followed usually by a straightening coat. Over this the tiles are applied in an adhesive coat, either by (1) floating or (2) buttering. In the former case, the adhesive cement is spread over an area in advance of the tile application and the tile forcibly applied to its surface. In the latter, each tile is backed with cement and forced into place separately.

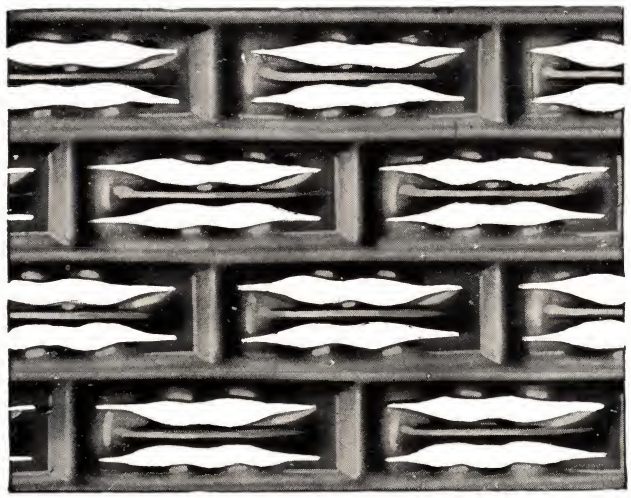
BASIS OF PREFERENCE

Lath Is Self-Furring—Applied with trusses against the support (as it always should be), Super-Bostwick "Truss-Loop" Lath furrs out and affords ample key over studs or channels, where single plane reinforcement would give little key. In instances where it is applied over a considerable area of sheathing, as the back of a cupboard enclosure, the key is adequate for every purpose.

(Below) "Truss-Loop" installed as back-up for tile fireplace.

(Right) Finished fireplace





Incomparably Stiffer—Weighing 4½ lbs. per sq. yd., Super-Bostwick "Truss-Loop" Lath is more rigid than any lath otherwise adapted for the purpose. Its rigidity is due to a system of raised "trusses" and a double system of stiffening ribs running longitudinally and transversely of the sheet. These insure that the mallet blows of tile setting will produce minimum vibration in the cement coat.

Saves One Day's Time—Super-Bostwick "Truss-Loop" Lath is noted in the plastering trade as the one lath over which "doubling back" with a brown coat over the newly applied scratch coat is good practice. This advantage is highly important in tile applying. The typical tile job is a bathroom of moderate size which can be lathed by one man in a day. Another day suffices for applying the scratch and straightening coats, permitting him to set tile on the third day. In more limited areas, he can often finish lathing and two coats of cement in one day, permitting tile setting on the second day. In either case, he avoids a separate day's attention to the application of the straightening coat.

CONSTRUCTION HINTS

Need of Thoroughness—In no lath application is substantial construction more important than in tile work. Supports should be not more than 16 in. on centers; plenty of nails used in nailed work, ample ties in tied applications.

Carry Around Corners—While shoeing with cornerite will justify butted corners in ordinary plastering, for tiled work it is recommended that lath be bent around all corners.

For Tiled Floors—A cement slab laid over matched flooring depressed below the level of the finished floor and protected by tar paper affords an excellent base for floor tile. Reinforcement with Bostwick Tiles Expanded Lath is recommended, the lath to be pressed into the moist base coat and the straightening coat applied over it.

THE Bostwick STEEL LATH COMPANY

COMPLETE LINE OF METAL LATH AND LATH ACCESSORIES

SUPER-BOSTWICK "TRUSS-LOOP" LATH

BOSTWICK CHANNEL FORM LATH

BOSTWICK JUNIOR EXPANDED LATH

BOSTWICK BOSS-RIB METAL LATH

BOSTWICK V-RIB METAL LATH

BOSTWICK RIB-EXPANDED LATH

BOSTWICK STEEL STUDS

BOSTWICK SYSTEM PARTITIONS

BOSTWICK CORNER BEAD

BOSTWICK METAL BASE BEAD

BOSTWICK WALL PLUG

INVISIBLE PICTURE MOULDING

THE BOSTWICK STEEL LATH COMPANY

NILES, OHIO

Eastern Warehouse PHILADELPHIA, PA.

Photograph of Auditorium of Senior High School, Jamestown, N. Y., plastered over Super-Bostwick "Truss-Loop" Lath. Architects, Beck & Tinkham

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THE CONSOLIDATED EXPANDED METAL COMPANIES

Metal Lath and Lathing Accessories

WHEELING, W. VA.

SALES OFFICES AND WAREHOUSES

ATLANTA, GA. BOSTON, MASS. BUFFALO, N. Y. CHICAGO, ILL. CINCINNATI, OHIO CLEVELAND, OHIO HOUSTON, TEX. NEW YORK, N. Y. PHILADELPHIA, PA. PITTSBURGH, PA.

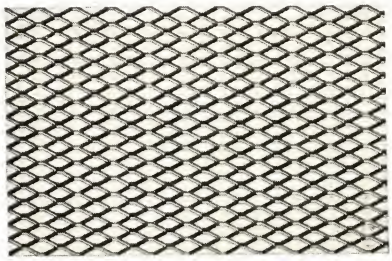
Products

Diamond Lath, Arch Lath, Two-Mesh and Three-Mesh Lath, ⅜ in. Rib Lath, ¾ in. High Rib, Combination and Jumbo Laths; Stucco Binder; Wide Apron, Wing Type, Bullnose and Expanded Corner Bead; Plain and Curbed Base Screeds; Cornerite; Cold Rolled Channels.

Picture Mould, Hank Tie Wire, Stub Nails, Wall Ties, Wall Plugs, Wing Bead Clips; Coal Doors; Ash Pit and Clean-out Doors.

For other Steelcrete pages, see File Index.

Steelcrete Diamond Lath



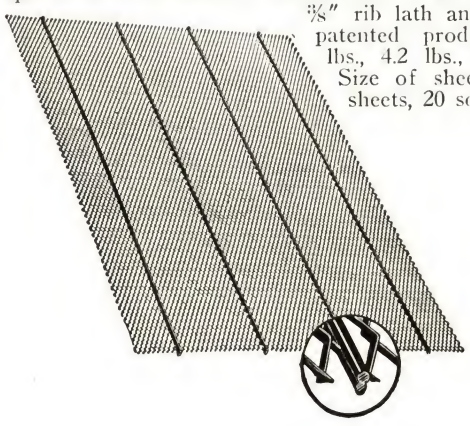
Steelcrete Diamond Lath is the stiffest lath of its type manufactured. All sheets are flat and have perfectly straight and parallel sides. Size of sheet, 27x96 in.; packed 10 sheets per bundle, 20 sq. yds.

Furnished in weights 3.4, 3.0, 2.5 and 2.2 lbs. per sq. yd. Also galvanized in weights 3.4 and 2.5 lbs. per sq. yd.

Steelcrete Diamond Lath, unless otherwise specified, is always coated with our special dip. Dip adheres closely, giving lath a thin coating impervious to rust.

Steelcrete Bar-X-Lath

Bar-X-Lath—the Diamond Mesh Lath which is reinforced with solid steel ribs consisting of four pairs of No. 11 rods spaced on 7-in. centers. Bar-X-Lath is an improved type of ⅜" rib lath and is an exclusive patented product. Weight—3.4 lbs., 4.2 lbs., 4.6 lbs., painted. Size of sheets—27x96 in. 10 sheets, 20 sq. yds. per bundle.



Combination Lath

Any weight of Diamond or Bar-X-Lath can be furnished with paper backing.

Three styles of paper are available, perforated or plain, as follows:

Waterproof insulation — designated as "W."

Kraft insulation — designated as "K."

Foil insulation—designated as "F."

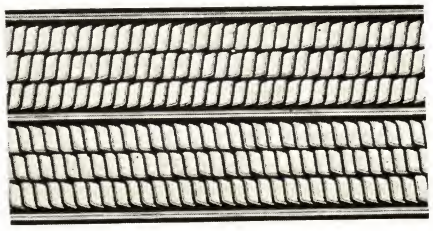
Each of the above types are furnished:

Perforated for "Tie-On" work—designated as "T."

Unperforated for "Nail-On" work—designated as "N."

Steelcrete "3-Mesh" Flat Rib Lath

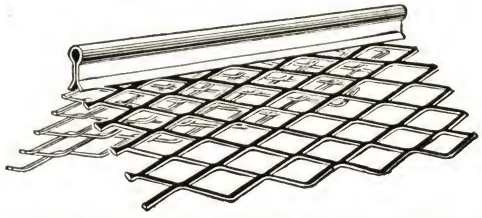
This new type of flat rib lath is remarkably efficient for binding and reinforcing plaster. The openings between the strands are small, giving a uniform reinforcement and positive bond over the entire surface covered.



Weight: 2.75 lbs., 3.0 lbs., 3.4 lbs., painted; 3.6 lbs., galvanized.

Sheets, 24x96 in.; 9 sheets, 16 sq. yds. per bundle.

Expanded Corner Bead



The expanded metal wing permits the plaster to key through to the lath beneath and form a strong bond.

Lengths: 6, 7, 8, 9, 10 and 12 ft. 26-gauge, galvanized. Weight: 2½-in. wing 230 lbs. per 1000 lin. ft.; 5-in. wing 430 lbs. per 1000 lin. ft. Packed 500 lin. ft. per crate.

Wing Type Corner Bead

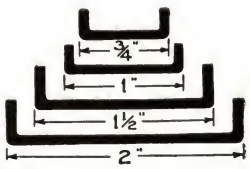
Makes a strong rigid outside corner. Plaster cannot pull away from corners reinforced with this bead.

1½-in. wing. Lengths: 6, 7, 8, 9, 10 and 12 ft. Weight: 176 lbs. per 1000 lin. ft. 26-gauge, galvanized. Packed 100 pieces per crate.

Cold Rolled Channels

Cold Rolled channels for use in suspended ceilings, furring and studding.

Size, in.	Gauge	Wt. 1000 lin. ft., lbs.
¾	16	276
1	16	332
1½	16	442
2	16	553



Stock lengths, 16 and 20 ft.
¾ and 1-in. channels shipped 25 pieces bundle.
1½ and 2-in. channels shipped 10 pieces bundle.

THE GOLDSMITH METAL LATH CO.

Manufacturers of Steel Building Materials for Concrete and Plastering

CINCINNATI, OHIO

STEEL BUILDING MATERIALS

Goldsmith Flat Diamond Mesh Lath—This lath designed so that mortar spreads with ease, thoroughly embedding strands. No sagging of lath—excessively wet mix for keying unnecessary; result, plaster saving with minimum of droppings. All lath sheets trimmed square at ends—lay perfectly flat—easier to tie to furring. Sheets 27x96 in.; 2 sq. yds. per sheet. Strands $\frac{1}{16}$ in. wide—small openings—great stiffness. Also furnished in Self-furring, Cornerlath and Lath Strips. Supplied in weights of 2.2, 2.5, 3, 3.4 lbs. per yard, of grades, finish and

quality conforming with Department of Commerce Simplified Practice Recommendation R3-36 effective July 1st, 1936, and complying with Federal Specification QQ-B-101b.

Other Goldsmith Expanded Laths—Flat Rib in 2.75, 3, 3.4 and 4 lbs. per yard; $\frac{3}{8}$ in. Rib Lath in 3, 3.4 and 4 lbs. per yard; $\frac{3}{4}$ in. Rib Lath in .46, .56 and .74 lbs. per sq. ft. All of these laths produced to conform to Department of Commerce Simplified Practice Recommendation R3-36 effective July 1st, 1936, and Federal Specification QQ-B-101b.

Phoenix Metal Lath—A $\frac{3}{8}$ in. rib plate lath, intermediate Shurebond and Clincher. Applicable wherever ordinary $\frac{3}{8}$ in. Rib Lath used. A much higher quality product and very economical. Weight 4.85 lbs. per yard.

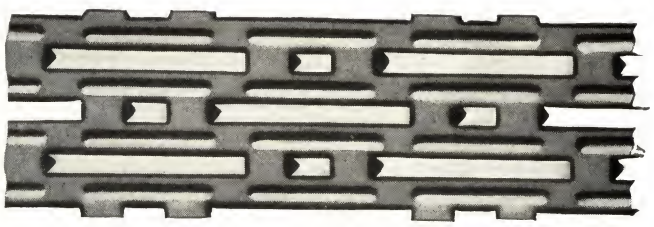
Corner Beads—Furnished in 26 or 24 ga. galvanized in lengths of 6, 7, 8, 9, 10 and 12 ft. No. 5 eliminates clips—2½ in. flanges—specified regularly by Government Departments. No. 3 is regular stock bead with 1¼ in. flanges.

No. 5

No. 3

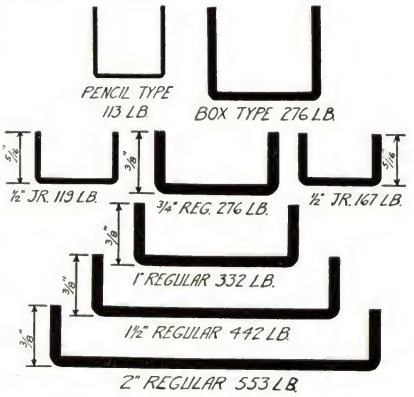
All kinds and types of corner beads, base screeds, picture mould, etc., are part of the complete Goldsmith line of Plastering Specialties. Write for samples and literature of other specialties you are interested in. For obtaining straight protected corners, specify "GOLDSMITH".

Clincher Metal Lath—A flatrib plate lath. A standard commodity successfully merchandised for over 40 years. Ideal as a backing for marble and tile work. As a plaster base—greater rigidity, longer life, lower cost of finished work. Equally efficient for nailed or tied on work. No metal sheared away—webs around perforations, truss shaped which overlap, stiffening the sheet—heavily beaded. Sheets 27x96 in.; 2 sq. yards per sheet. Weight 4.5 lbs. per yard.



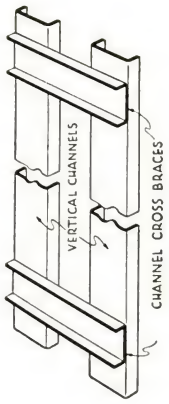
Shureband Metal Lath—Permanency with real structural value. A perforated plate with $\frac{3}{8}$ in. dovetail ribs 4 in. o.c. Weights 5.63, 7.2, 9 and 11.25 lbs. per yard. For solid plaster partitions and suspended ceilings, prevents sound transmission. Unexcelled as a Self Centering, for top and short span concrete slabs. Load carrying tables and literature upon request. For lighter duty, made as 4-Rib Shurebond with $\frac{3}{8}$ in. channel ribs 8 in. o.c. in weights of 5, 6.3, 7.56 lbs. per yard.

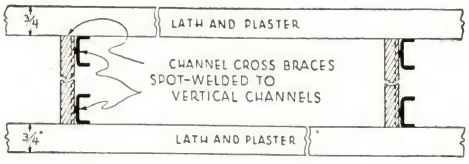
Goldsmith Cold Rolled Channels—These have sharp bends and are absolutely straight. Load carrying tables furnished upon request. Stock lengths 16 and 20 ft.—other lengths on special order. *Note:* ½ in. Jr. Channels individual with us—ideal for brackets and light furring.



Inserts—We are pioneers in developing inserts for hanging ceilings and for attaching every conceivable type of furring and/or lath to concrete and brick work. Write for other types.

Other Products—Leasing of heavy gauge *Removable Metal Forms* for forming concrete joists. *Sleeper Clips* for attaching wood floors to concrete—made in 20 and 18 Gauge painted or galvanized for 2, 3 or 4 in. wood sleepers.



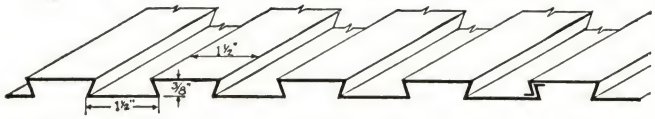


Shurebond Built-up Studs—Have two vertical channels, spaced apart with channel cross braces all rigidly welded together, thus forming a complete unit.

Any thickness hollow partition can be obtained. Erect the Studs in the same manner as channels for solid plaster partitions, a distance apart depending upon the span the lath will take.

Attach lath to each side of the Stud.

Plastoform—Will eliminate guesswork, and the element of chance of plaster bonding and staying bonded to concrete. Plastoform is easier to install than wood sheathing which it replaces. The continuous dovetail keys are positively bonded



to the concrete on the one side, and ready to receive plaster on the opposite side. To form slabs, beams, columns, walls, etc., the simplest type of temporary wood centering is required. The resultant cost is less than using wood forms without any after treatment. Chemicals, plastics and mastics are not positive bonding mediums, but Plastoform is. It is also used for lining wood forms. Furnished in 1, 1½ and 2-in. Above illustrates 1½-in. All concrete work in the Officers Apartment Buildings at Quantico, Va., out of the War Department, and innumerable other projects are treated for plaster bond with Plastoform.

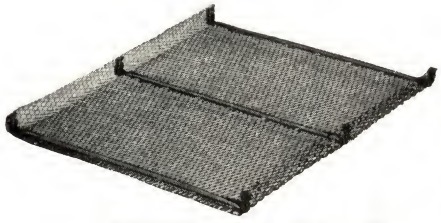
THE SHUREBOND UNIT SYSTEM OF CONCRETE JOIST CONSTRUCTION

This construction is used with reinforced concrete or structural steel frame, or with bearing walls. It incorporates the metal forms which act as moulds for forming concrete joists and top slabs, and the metal lath for the ceilings under the slabs (see illustrations below). Tile units can be furnished any width or depth, with end units and lath bottom units to match. Any degree of tapered or beveled end tile can be supplied. Tile units have great strength and rigidity as they are made from special analysis heat treated steel. This system offers the following advantages, resulting in good workmanship and economy:—Less dead load; simple wood forming; quick installation; positive integral bonding of lath bottoms; maximum concrete displacement; simple conduit installation; hard dense concrete; conformity with any structural design; permanency.

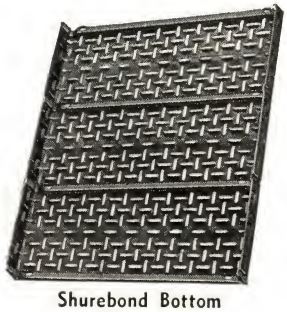
Used in such buildings as the Merchandise and Furniture Marts, Chicago; Carew Tower Project, Cincinnati; Esperson Bldg., Houston; Gimbel Bros. Dept. Store, Philadelphia; Barnett National Bank Bldg., Jacksonville; Dexter Horton Bank Bldg., Seattle, Baltimore and Boston Federal Buildings, and many other references just as representative.

Shurebond Tile Unit

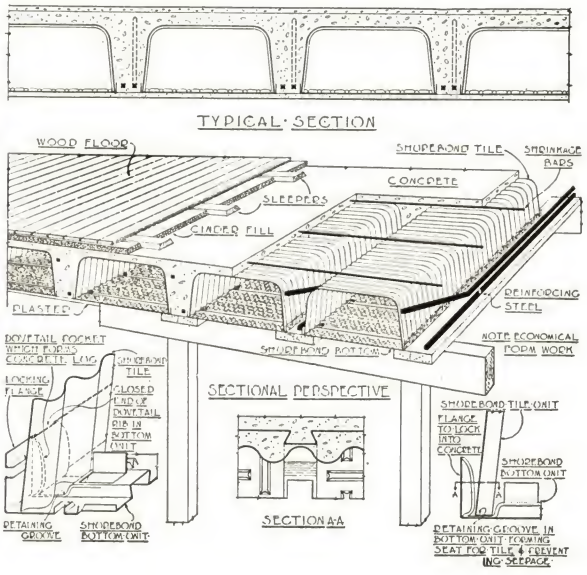
Shurebond End Unit



Ankorlath Bottom Unit



Shurebond Bottom Unit



METRODECK

(Metal Roof Deck) made with ribs 1½ or 1¾ in. deep, spaced 6" o.c. of 18, 20, 22 and 24 gauge, regular or copper bearing steel, painted black or gray, and of the same gauges in galvanized. Ribs taper in the length of the deck, telescoping with ribs of adjacent plates when lapped endwise. Unnecessary to force ribs together to make them mesh. It is easily and quickly adjusted to center on purlins, lays flat and buckling of metal between ribs is eliminated. Erection costs greatly reduced. A smooth uniform surface results, to which cork or board insulation is stuck with hot mopped asphalt. Roofing is then applied to insulation. Deck is erected with intermediate and purlin clips, or welded. Light dead load to carry given live load, cuts weights of structural members. Write for safe load tables or send plans for suggestions.

Rough Metal Bucks—for attaching wood trim around door openings for solid plaster, clay or gypsum tile, or hollow metal lath and plaster partitions. Further information on request.

JOHNS-MANVILLE

EXECUTIVE OFFICES
22 East 40th Street, NEW YORK, N. Y.

Member of The Producers' Council, Inc.

Products

J-M STEELTEX for PLASTER, STUCCO and BRICK or STONE VENEER. *(Other Steeltex products will be found in our catalog in the Concrete Reinforcement section of this edition.)*

For the following Johns-Manville products, see File Index: Acoustical Treatment; Transite Walls; Asbestos and Asphalt Shingles; Built-up Roofs; Insulated Roofs; Transite, Corrugated and Flat; Home Insulation; Insulating Board and Insulating Lath; Pipe Coverings and Insulations; Tile Flooring; Asbestos Wainscoting and Flexboard.

J-M STEELTEX

For Plaster—For Stucco—For Brick or Stone Veneer

To provide a better method of reinforcing plastic building materials, Johns-Manville offers Steeltex, in styles for interior or exterior application. The use of Steeltex does not involve a single change in building methods and is no more costly than the less satisfactory materials formerly employed. Many years of service have proved its structural value, fire-resisting qualities, durability, and economy and speed in erection.

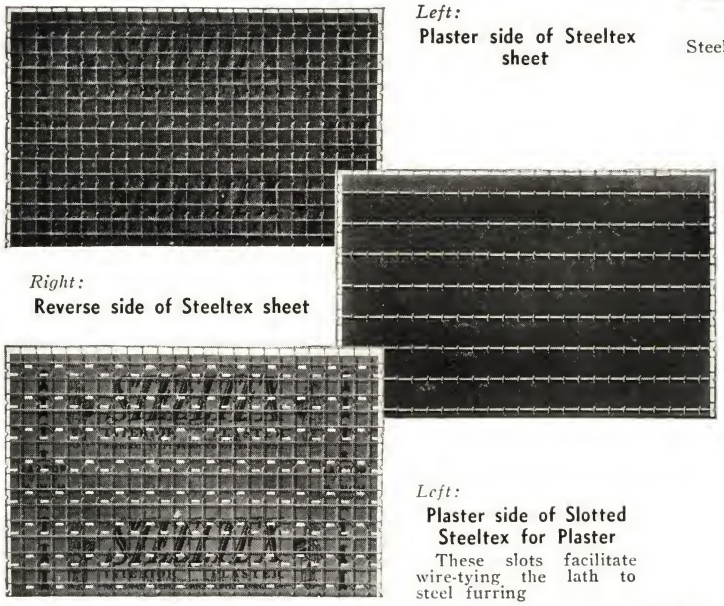
J-M STEELTEX FOR PLASTER

Steeltex for Plaster combines two functions in a single material. The reinforcing element consists of a network of 16-gauge cold-drawn galvanized copper-bearing steel wires welded on 2-in. centers. This square mesh or fabric becomes automatically embedded in the plaster, giving effective reinforcement at all points, distributing strains equally in all directions and reducing plaster cracking hazards to the minimum.

Combined integrally with the welded wire reinforcing fabric is a fibrous absorbent backing, to which the mortar is instantly bonded and firmly adheres during the curing process. As the plaster sets, both the backing and wire fabric become an integral part of the plaster slab, resulting in a one-piece steel-reinforced construction exactly like reinforced concrete in principle.

Steeltex for Plaster

Steeltex for Plaster gives effective reinforcement, distributing strains equally and reducing plaster cracking hazard to the minimum



Left:
Plaster side of Steeltex sheet

Right:
Reverse side of Steeltex sheet

Left:
Plaster side of Slotted Steeltex for Plaster

These slots facilitate wire-tying the lath to steel furring

Steeltex for Plaster is furnished in convenient sized sheets (30½x49 in. in size), which are nailed to the studs and then plastered in the regular way. The sheets have a board-like rigidity, which eliminates deflection or sag and insures rapid, easy application and maximum plaster coverage. Since all of the mortar functions in the slab, no plaster is wasted in the formation of "keys." In addition to these advantages, the rib stiffeners on the back of each Steeltex sheet also provide a furring effect, which eliminates stud and joist marks in the finished plaster job.

Where it is desired to attach Steeltex direct to pencil rods, channel or other furring, the material is furnished with slotted openings in the fibrous backing which allow it to be tied with tie wires, in the same manner as metal lath. Although the slots are of ample size to insure easy tying, they are not large enough to waste mortar.

Underwriters' 1-Hour Fire Rating

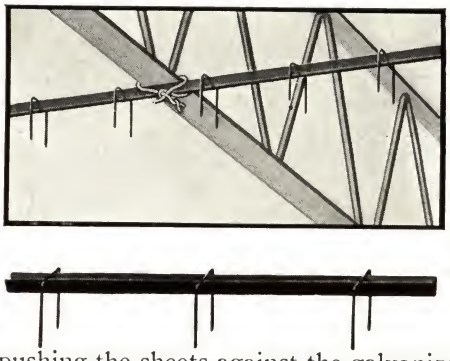
As a result of exhaustive tests conducted by the Underwriters' Laboratories, the material carries the desirable 1-hour fire rating, when partitions are lathed and plastered on two sides to ¾-in. grounds.

Adaptable to All Types of Work

Its ease of application and economy, combined with its structural advantages, adapt Steeltex to virtually all types of interior plaster work. It goes up rapidly on average work and is equally suited to cove or curved ceilings, corners, niches, arches and other unusual decorative shapes.

Steeltex Is Easily Attached to Steel Framing

Over standard steel framing, joists, etc., Steeltex for Plaster is applied by means of the Steeltex Attachment Bar. (Where the spacing of the steel framing is greater than 36 in. on centers, the ¾-in. Steeltex Channel is used.) The Attachment Bar is either tied or clipped to the steel members and the Steeltex is then applied by pushing the sheets against the galvanized wire prongs of the bars until these prongs puncture the Steeltex backing. The prongs are then bent over to engage the reinforcing mesh, completing a fast and economical method of attachment to the steel framework.



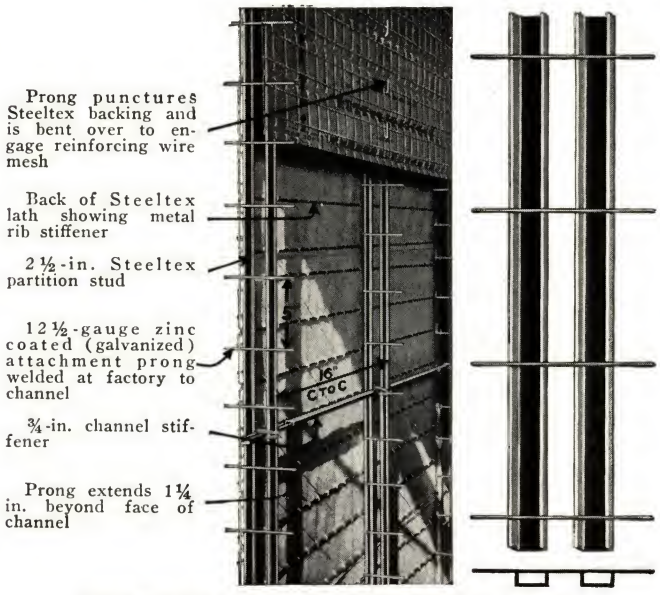
Steeltex Attachment Bar

For the open web type of joist, the attachment bar is saddle-tied with ordinary 14-gauge tie wires. This provides a rapid method of lath application over the steel framework. The U-shaped prongs are spot-welded to the bar every 5 inches

Steeltex Hollow Partitions

Hollow partitions are easily and economically erected with Steeltex, using the Steeltex Partition Stud illustrated below. Welded to the two channels of this stud at 5-in. intervals are galvanized wire prongs which puncture the Steeltex backing and are bent over to engage the reinforcing mesh and secure the sheets in place. Application of plaster to ¾-in. grounds on both faces forms a 4-in. partition which is light in weight, yet rigid, and unusually effective from the standpoint of sound deadening and acoustics.

Corners of such partitions are easily formed by bending the ribs of the Steeltex to the proper angle.

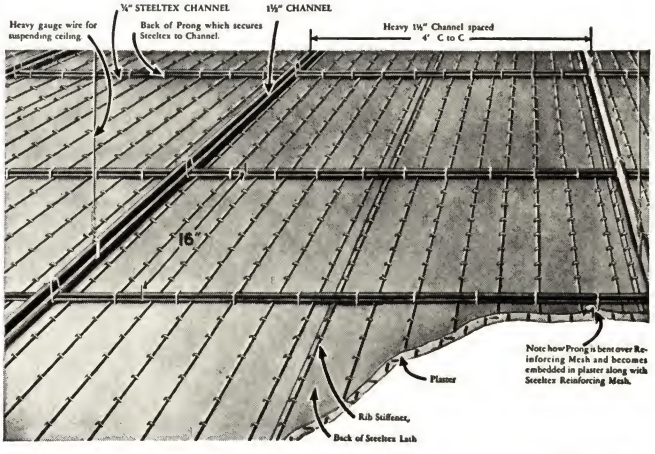


Detail showing construction of 4-in. Steeltex Partition

Using Steeltex for Plaster and the 2½-in. Steeltex Partition Stud which is formed of two ¾-in. channels, to which are electrically welded galvanized annealed wire prongs. Wider studs, up to the maximum of 5½ in., can be supplied on special order

Steeltex for Suspended Ceilings

Complete suspended ceiling systems are also easily constructed with Steeltex, runner channels being first hung by heavy gauge wire the required distance from the floor slab. To these runner channels, ¾-in. Steeltex Channels, provided with prongs for attaching the Steeltex sheets, are then saddle-tied at right angles. In addition to its ease of erection and structural strength, this type of ceiling is light in weight and adaptable to any desired contour.

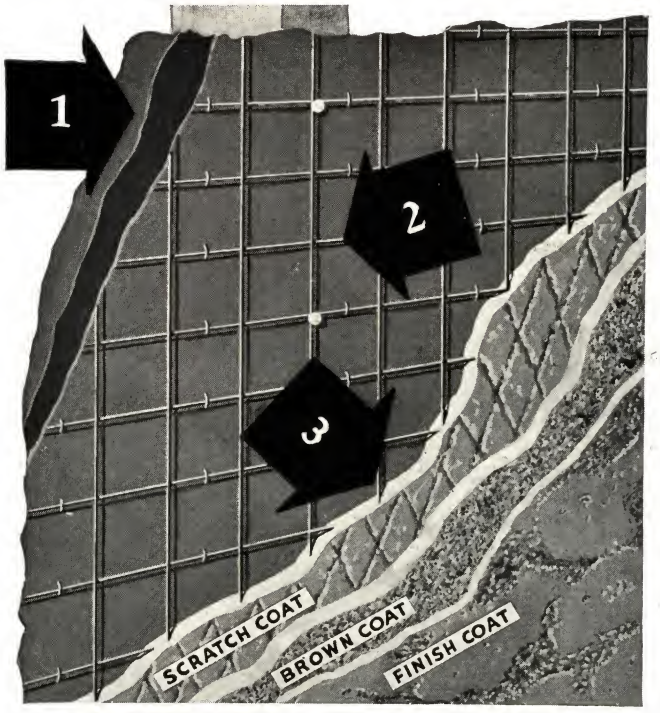


Steeltex Suspended Ceiling

Using 1½-in. runner channels and ¾-in. Steeltex channels. The prongs of the latter pass through the Steeltex backing and are bent over the reinforcing mesh, holding the sheets securely in place

J-M STEELTEX FOR STUCCO

More perhaps than any other plastic building material, portland cement stucco requires proper reinforcement. Without it, the low tensile strength of the stucco slab is inadequate to resist severe structural stresses, and cracking is almost certain to result.



Diagrammatic Steeltex for Stucco built-up wall section
(1) Waterproof backing. (2) Reinforcing fabric. (3) Monolithic stucco slab

Steeltex for Stucco derives its reinforcing effectiveness from a network of heavy galvanized copper-bearing steel wire fabric as in Steeltex for Plaster, except that the wire is 14 instead of 16-gauge and the waterproof membrane backing is composed of a double layer of tough fibrous backing, with the layers cemented to each other and further waterproofed by a layer of waterproof mastic compound between. The backing is fastened to the reinforcing wires by crimped stitch wires which let it fall away from the steel reinforcement 3/8 in., thus insuring the complete embedding of the steel wires in the stucco slab. The backing, in addition to providing a suitable base to receive and hold the wet mortar until it has set, furnishes a seal against moisture penetration and air-infiltration.

J-M Steeltex for Stucco is furnished in 50-sq. yd. rolls, 49 in. wide and 110½ ft. long, weighing 142 lbs. per roll. Also supplied in sheets 49x52 in., shipped in bundles of 50 sq. yds. (26 sheets) weighing 160 lbs. For proper application, approximately 15 Steeltex Furring Nails are necessary per yard.

For new construction, Steeltex for Stucco is nailed either directly to the studs or over sheathing. It is also admirably suited to the modernization of old homes by nailing the Steeltex directly over the old clapboard or shingled sidewalls and then applying the stucco.

J-M STEELTEX FOR BRICK OR STONE VENEER (38-16)

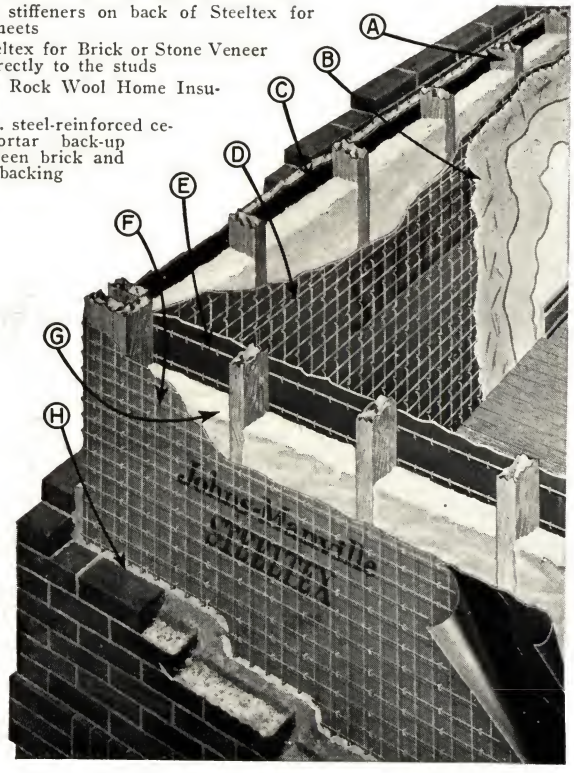
J-M Steeltex for Brick or Stone Veneer (38-16) is exactly like Steeltex for Stucco except that the galvanized steel reinforcing fabric is made of 16 instead of 14-gauge copper-bearing steel wire.

It is furnished in rolls 49 in. wide and 110½ ft. long, containing 50 square yards and weighing 107 lbs.

Construction of a brick or stone veneer wall with Steeltex requires no radical change in building methods. The Steeltex is first nailed direct to the wood studding, shingle fashion, as in the case of stucco construction. The brick or stone is then laid up approximately 1 in. from the framework. In place of the customary method of tying to the framework, however, this 1-in. space is filled in with bricklayer's cement-mortar as each course is laid. The mortar flows around the Steeltex reinforcing wires, completely embedding them.

The result is a monolithic slab of brick or stone and steel-reinforced cement-mortar, bonded together to impart elements of strength and stability not found in ordinary veneer construction, and thoroughly sealed against moisture penetration by the heavy waterproof Steeltex backing.

A. Wood studding, protected against fire on all four sides by J-M Rock Wool Home Insulation and steel-reinforced cement mortar and plaster
B. Interior plaster applied over Steeltex for Plaster
C. Waterproof backing of Steeltex for Brick or Stone Veneer
D. Steeltex for Plaster applied to studs
E. Rib stiffeners on back of Steeltex for Plaster sheets
F. Steeltex for Brick or Stone Veneer nailed directly to the studs
G. J-M Rock Wool Home Insulation
H. 1-in. steel-reinforced cement mortar back-up slab between brick and Steeltex backing



A Structural Wall That Will Endure

At the right is shown an interesting example of how two Steeltex products—Steeltex for Brick or Stone Veneer and Steeltex for Plaster—supplemented by Johns-Manville Rock Wool Home Insulation between the studs, can be used to provide a wall of greater structural strength, comfort, fire-safety and water-tightness for modern home construction.

J-M STEELTEX SPECIFICATIONS

J-M STEELTEX FOR PLASTER

Complete individual specifications for any application of J-M Steeltex for Plaster may be had on request. For the convenience of the architect and others, the following short form specifications are here given.

1. Lathing Specification for Ceilings and Sidewalls Over Wood Framing

All interior walls, partitions and ceilings, where specified and designated plaster, shall be lathed with J-M Steeltex for Plaster (2 x 2-in. mesh, 16-gauge, cold-drawn, electrically-welded, galvanized copper-bearing steel, self-furring wire fabric, to which a tough, fibrous backing is secured by a 26-gauge V-shaped rib).

Steeltex for Plaster shall be attached to ceilings with 6d common wire or box nails, driven into each joist and bent over each rib.

Steeltex for Plaster shall be attached to walls with 4d common wire or box nails, driven into each stud and bent over each alternate rib. All joints shall be staggered on both ceilings and sidewalls, so that four corners of adjacent sheets shall not occur at any one place. All laps shall be 1 in. and made so that wire laps against wire. Lathing of ceiling shall start at a corner, bending the first sheet of Steeltex at the ceiling angle to make a drop or apron down the sidewall of at least 4 in. Sidewalls shall be lathed from ceiling down so that all horizontal laps are made over top sheets. To afford one-hour fire protection, partitions must be plastered on both faces to full ¾-in. thickness with gypsum plaster.

2. Lathing Specification for Ceilings Under Steel Joists

J-M Steeltex for Plaster (2 x 2-in. mesh, 16-gauge, cold-drawn, electrically-welded, galvanized copper-bearing steel wire, self-furring fabric to which a tough, fibrous backing is secured by a 26-gauge V-shaped rib) shall be attached to steel joists with Steeltex V-shaped Attachment Bars or ¾-in. Steeltex Channels (19-gauge Attachment Bars where spacing of joists is less than 24 in.; 16-gauge Bars where spacing is 24 to 36 in.; ¾-in. Steeltex Channels where spacing is over 36 in.).

Attachment Bars or Channels shall be placed at right angles to the steel joists and attached to the flanges of rolled section joists with clips which hook over the flange of the beam and to the bottom chord of bar joists by tying with a double strand of 14-gauge galvanized annealed wire. In all cases, Attachment Bars or Channels shall be spaced not over 16 in. and so arranged that joints of the Steeltex sheets shall be made over the Attachment Bar or Channel and not between.

Steeltex for Plaster shall be applied with ribs at right angles to the Attachment Bars or Channels, starting at the corner of the ceiling and bending the first sheet at the ceiling angle to provide a drop or apron down the sidewall of at least 4 in. The Steeltex shall be secured to the Attachment Bars or Channels by pushing the lath against the prongs so that they puncture the backing and when the lath rests firmly against the Attachment Bar or Channel, bending the prongs over the reinforcing wires of the lath and pressing the ends in firmly.

Joints shall be staggered so that the four corners of adjacent sheets shall not occur at any one place. End laps shall be made over Attachment Bars or Channels only, and not between, and shall be 1 in. Side laps shall be 1 in.

3. Erecting and Lathing Specification for Suspended Ceilings

Plastered ceilings suspended from flat slab, arches, pan system, or other similar floor construction shall be constructed with J-M Steeltex for Plaster (2 x 2-in. mesh, 16-gauge, cold-drawn, electrically-welded, galvanized copper-bearing steel wire, self-furring fabric to which a tough fibrous backing is secured by a 26-gauge V-shaped rib) applied to Steeltex ¾-in. Channels. ¾-in. Steeltex Channels shall be spaced on 16-in. centers and tied with 18-gauge, galvanized annealed wire to 1½-in. runner channels, spaced on 4 to 5-ft. centers. Runner channels shall be suspended the required distance from the floor slab with heavy gauge, galvanized wire or with hanger straps.

Steeltex for Plaster shall be placed with ribs at right angles to ¾-in. Steeltex Channels and secured to ¾-in. Steeltex Channels by pushing the lath against the prongs so that they puncture the backing and, when the lath rests firmly against the ¾-in. Steeltex Channel, bending the prongs over the reinforcing wires of the lath and pressing the ends in firmly.

Joints shall be staggered so that four corners of adjacent sheets shall not occur at any one place. End laps shall be made on channels only, and not between, and shall be 1 in. Side laps shall be 1 in.

4. Erecting and Lathing Specification for 4-in. Steeltex Hollow Partitions

4-in. Steeltex Hollow Partitions shall be constructed with 2½-in. J-M Steeltex Studs (steel studs fabricated by joining together two lines of ¾-in. hot-rolled channels and welding 12½-gauge galvanized annealed wire across the legs at 5-in. intervals, the wires extending at least 1¼ in. from the channel and the stud having an over-all depth of 2½ in.). Steeltex Studs shall be spaced on 16-in. centers for partitions under 12 ft. high; on 12-in. centers for partitions 12 to 15 ft. high, and on 8-in. centers for partitions 15 to 20 ft. high.

¾-in. or 1-in. Channels, to act as stiffeners, shall be permanently wired horizontally between the studs on not less than 4-ft. centers and anchored at each end in the sidewalls. The 2½-in. J-M Steeltex Studs shall be secured to floor and ceiling bearings by runner channels, nailing, ceiling and floor brackets, or holes cut in concrete floor and in ceiling.

After the partition studs have been erected plumb and true, J-M Steeltex for Plaster (2x2-in. mesh, 16-gauge, cold-drawn, electrically-welded galvanized, copper-bearing steel wire, self-furring fabric to which a tough fibrous backing is secured by 26-gauge V-shaped rib) shall be attached to the studs by pushing the lath against the prongs so that they puncture the fibrous backing. When the lath rests firmly against the studs, the prongs shall be bent over the reinforcing wires of the lath and pressed in firmly.

J-M STEELTEX FOR STUCCO

5. Lathing Specification for Stucco Over Wood Framing

All exterior walls where specified and designated stucco shall be lathed with J-M Steeltex for Stucco (2 x 2-in. mesh, 14-gauge cold-drawn, electrically-welded, galvanized copper-bearing steel wire fabric, to which is secured a tough, double-layer fibrous backing with a mastic filler between the layers).

Steeltex for Stucco shall be applied direct to studs or over sheathing, or over old siding in the case of remodeling, and nailed to bearings. Steeltex for Stucco shall be nailed over every stud horizontally across the building and every 6 in. vertically on the stud. Steeltex Furring Nails shall be placed under the horizontal wires at a corner of the mesh and toe-nailed to stretch the Steeltex taut automatically. Also nail around all door and window openings at 6-in. intervals.

The first width of Steeltex for Stucco shall be started at the sill line and extend around the building. The second width shall lap the first at least 1 in. (shingle fashion), lapping so that wire laps against wire. Where vertical joints occur, the same method of lapping shall be employed, but laps shall be 1 in.

Steeltex for Stucco shall be carried up to the openings or under the moulding of all doors and windows. In no case shall vertical joints be joined at corners, under or over window or door openings, or between studs, where applied direct to studs. In no case shall Steeltex for Stucco be butted and in all cases the wire reinforcing must be continuous across all laps and embedded in the scratch coat of stucco.

Steeltex for Stucco in rolls is recommended applied direct to studs. For such construction, all horizontal laps midway between studs are secured with one tie of 18-gauge galvanized tie wire. Two ties are used between studs if studding is on 24-in. centers.

If Steeltex for Stucco in sheets is used, all laps shall be at least ¾ in. and the sheets placed so that the shortest dimension of the sheets extends across the studs.

In every case, the stucco placed over Steeltex for Stucco shall be applied in three coats to a total thickness of at least ⅞ in. in accordance with the specification of the Portland Cement Association.

For added protection at the corners of window and door openings remove the backing from a 8 x 12-in. strip of Steeltex and apply the wire mesh diagonally at all corners to provide double reinforcing.

J-M STEELTEX FOR BRICK OR STONE VENEER (38-16)

6. Specification for Sheathing Over Wood Framing

All exterior walls for brick or stone veneering over wood framing shall be sheathed with Steeltex for Brick or Stone Veneer (38-16) (2x2-in. mesh, cold-drawn, electrically-welded, galvanized copper-bearing steel wire fabric, to which is secured a tough, double-layer, fibrous backing with a mastic filler between the layers).

The first width of Steeltex 38-16 sheathing shall be started at the sill line and extend around the building. The second width shall lap the first 1 in. (shingle fashion), lapping wire to wire with no fibrous backing in between. Where vertical joints occur, the same method of lapping shall be employed, and end laps shall be 1 in.

Steeltex 38-16 shall be nailed with galvanized nails (preferably 11-gauge 1½-in. nails, with a hook head) at every third wire, or on 6-in. centers, to each stud and shall be securely nailed over every other wire, or on 4-in. centers, around all openings.

MEMORANDA

ARCHITECTS HANDBOOK ON

KNAPP

METAL TRIM

KNAPP BROS · MANUFACTURING CO ·

The following illustrations present standard details and sections of widely used items of our manufacture.

Complete data and full size details will be furnished upon request.

We welcome the opportunity to study unusual job conditions requiring deviations from standard designs.

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EXPERIENCE

Originated by a practicing architect, the Knapp Line of Sanitary Metal Trim and Plastering Accessories has, with the co-operation of the architectural profession, attained distinct leadership. Knapp experience covers a period of over thirty-three years.

FACILITIES

A modern plant of extensive proportions planned for maximum efficiency is devoted exclusively to the manufacture of pressed metal building specialties. Complete equipment allows fabrication of the unusual item in a variety of materials and finishes.

REPRESENTATIVE PRODUCTS

WINDOW TRIM AND STOOLS
STOP MOULDINGS
METAL BASE
COVE MOULDINGS
PLASTERED-IN CASINGS
APPLIED CASINGS
BLACKBOARD TRIM
CHALK TROUGH
CHALK TROUGH INSERTS
MAP AND DISPLAY RAIL
PLASTERED-IN PICTURE MOULDING
APPLIED PICTURE MOULDING
HEAVY DUTY PICTURE MOULDING
CHAIR RAILS
ACCESS PANELS
CORNER GUARDS
WYR-WAY BASE
FLOOR COVES
WIRE CARRYING RACEWAYS
SMALL NOSE CORNER BEADS
BULL NOSE CORNER BEADS
REINFORCED BULL NOSE CORNER BEADS
INNER ANGLE BEADS AND COVES
BASE GROUNDS
BASE SCREEDS
LINOLEUM GROUNDS

SERVICE

Special attention is given to the requests of architects, engineers, or builders in any problem arising from the adaptation of standardized designs to practical conditions. Advice or consultation is offered in developing a product for the unusual condition.

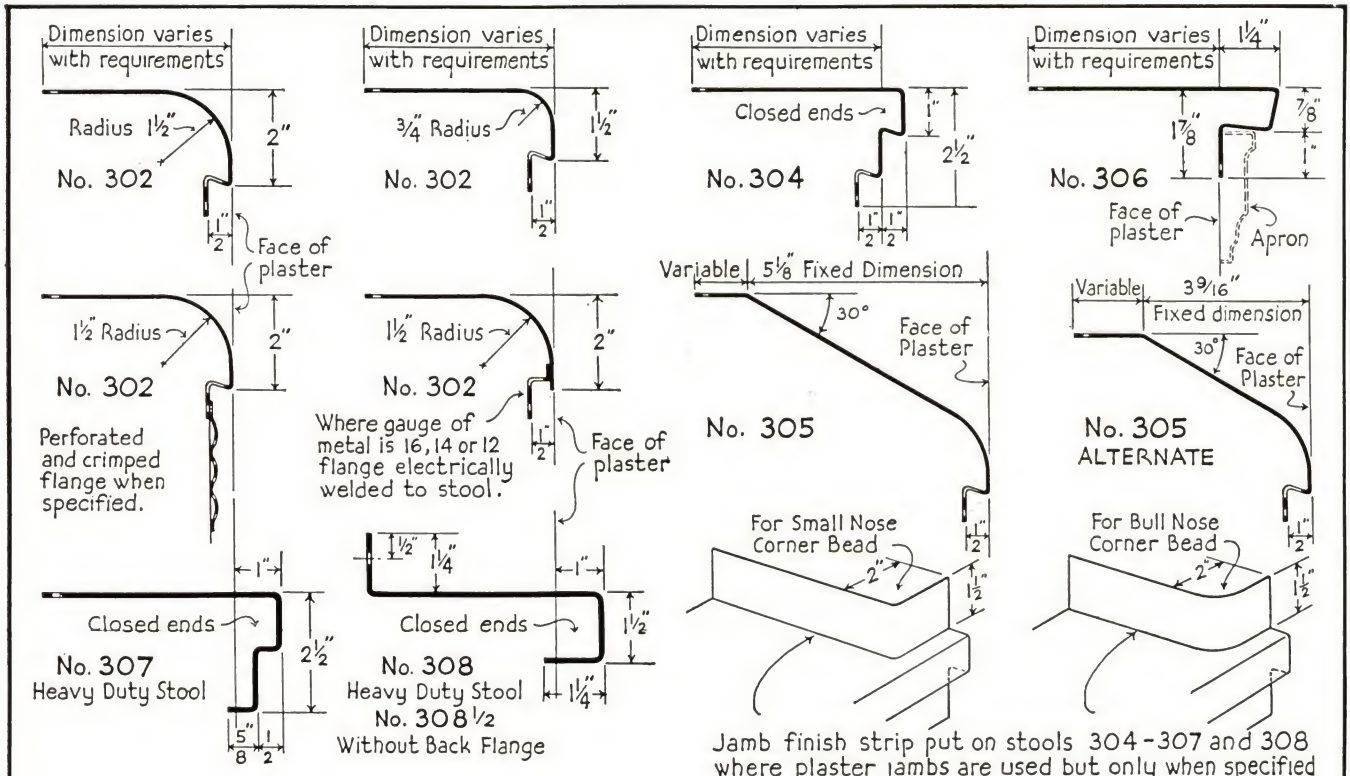
9/9 METAL WINDOW TRIM AND STOOLS

FUNCTION AND MERIT—Modern construction requires fire safeness and permanence, obtainable only through the use of substantial steel trim members. Plastered-in designs couple such functions with attractive appearance and economy of maintenance.

RECOMMENDATIONS—Unit type frames, shop assembled, are recommended for superiority of workmanship and finish. Knock-down frames are advisable when size prevents shipment of shop-made units. Shop assembly facilitates erection.

KIND AND GAUGE OF METAL—Extra tight coat galvanized steel sheets should be specified. Jambs and head of narrow reveal may be 20 ga.; wider reveals 18 ga. Stools of narrow reveal may be 18 ga.; wider reveals 16, 14, or 12 ga.

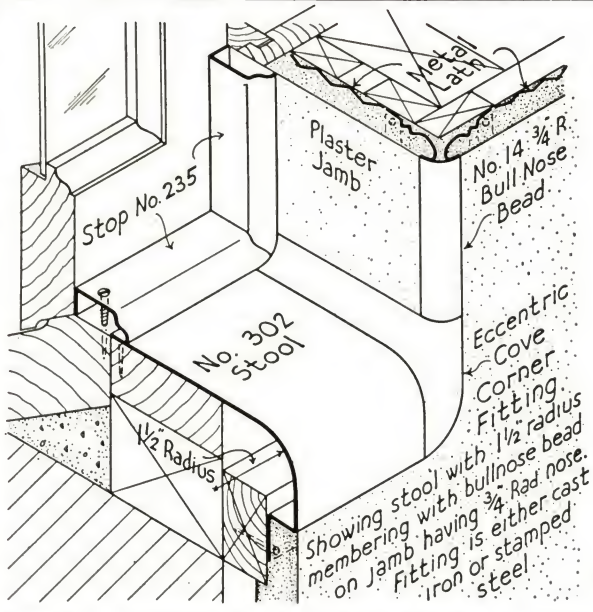
COMBINATIONS—Complete frames may consist of various sections or combinations. Typical assemblies consist of radius jambs and heads, together with flat or splayed stools. Corner construction may consist of fittings or welded miters.



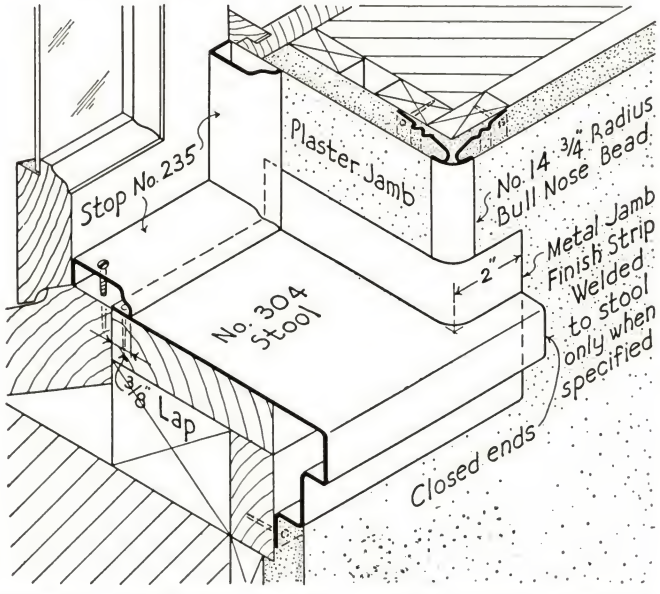
FULL SIZE DETAILS FURNISHED ON REQUEST

No. 302 trim may be used for the stool alone, in which case Knapp Sanitary end fittings are attached in the factory. These fittings member with Knapp bull nose corner beads, thus permitting the use of plaster jamb and head reveals. It is available in either ¾ in. or 1½ in. radius nose.

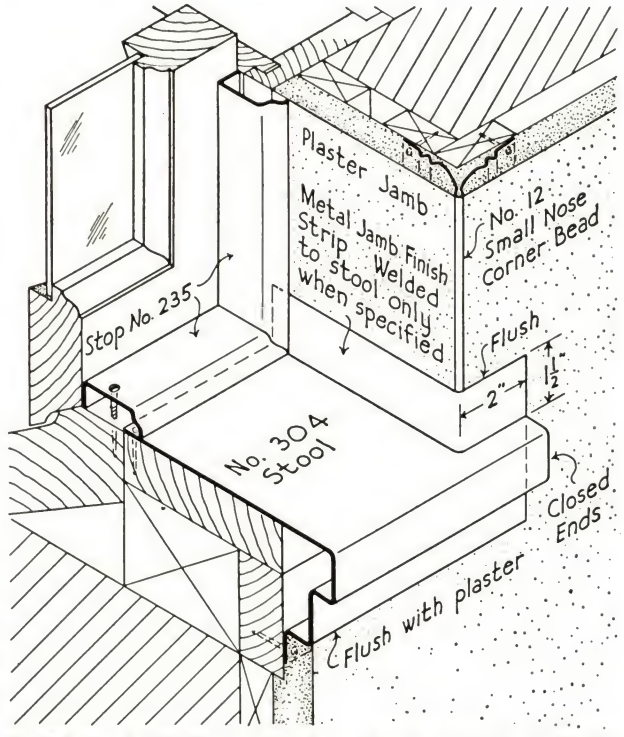
The jamb finish strip shown in the detail is furnished **only when specified.** When specified it will be made to match the Knapp small nose or bull nose bead specified. The **Jamb finish strip** provides a straight true line for the plaster jambs and effectively protects the joint between the metal stool and plaster jambs from damage and disintegration.



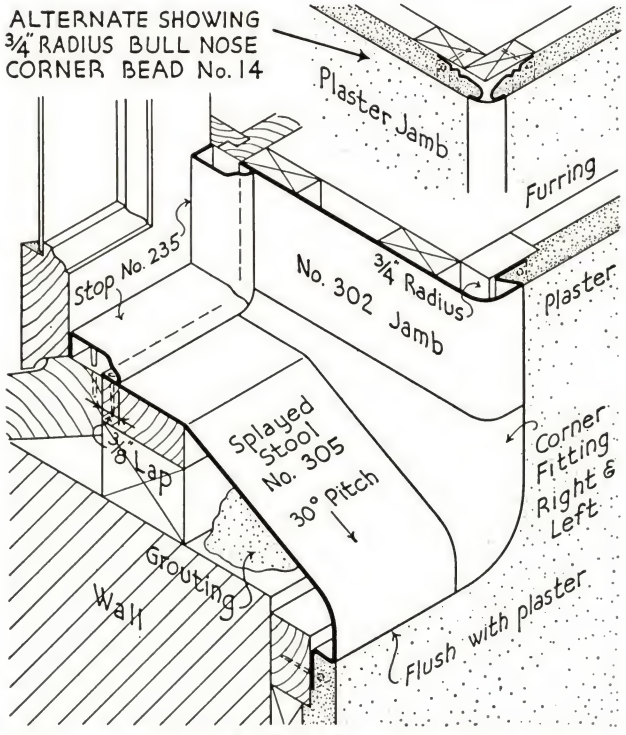
DETAIL SHOWING SANITARY STOOL No. 302 WITH COVE CORNER AND PLASTER JAMB



DETAIL SHOWING METAL JAMB FINISH STRIP WITH No. 304 STOOL AND No. 14 CORNER BEAD



DETAIL SHOWING METAL JAMB FINISH STRIP WITH No. 304 STOOL AND No. 12 CORNER BEAD



DETAIL SHOWING TRIM No. 302 WITH SPLAYED STOOL No. 305

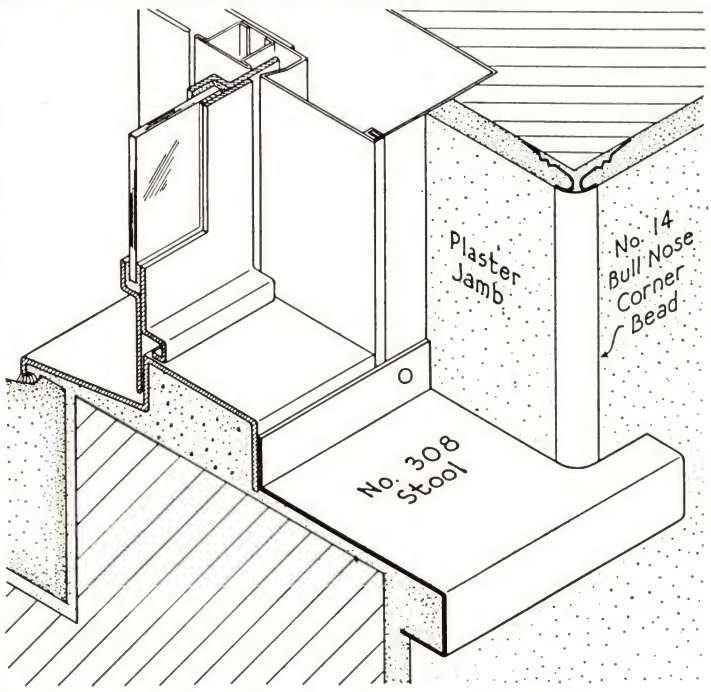
FULL SIZE DETAILS FURNISHED ON REQUEST

9/9 DETAILS OF WINDOW TRIM AND STOOLS

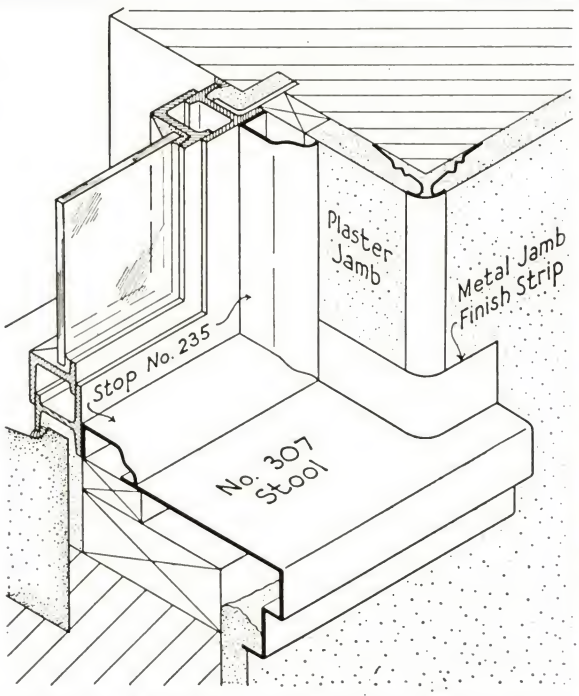
With Steel Sash

Knapp No. 308½ Heavy Duty Stool at Steel Sash

Knapp No. 304 Metal Stool at Steel Casement Sash



DETAIL SHOWING No. 308 STOOL WITH No. 14 CORNER BEAD AND PLASTER JAMB



SHOWING METAL JAMB FINISH STRIP WITH No. 307 STOOL AND No. 14 CORNER BEAD

FULL SIZE DETAILS FURNISHED ON REQUEST

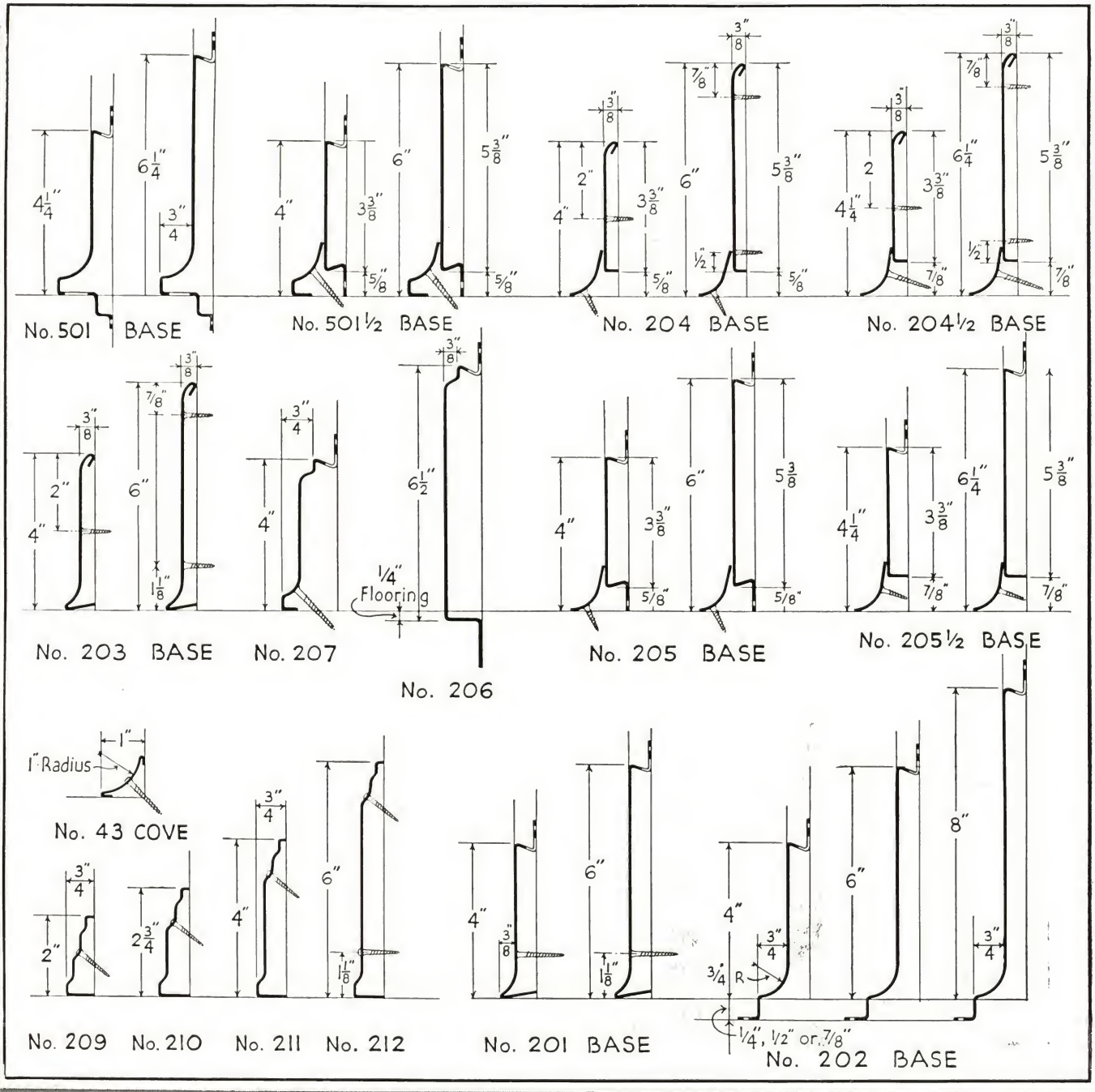
METAL BASE

STANDARD TYPES—There are several types of Knapp Metal Base. The details shown illustrate the general principles of both the plastered-in self-grounding and the applied-after-plaster types. Single or two member sections meet a variety of needs.

FITTINGS—Corner fittings and end stops are available for all base sections requiring their use. These fittings, of finest quality cast iron, are designed to be used in connection with square or cove internal as well as square or radius external corners.

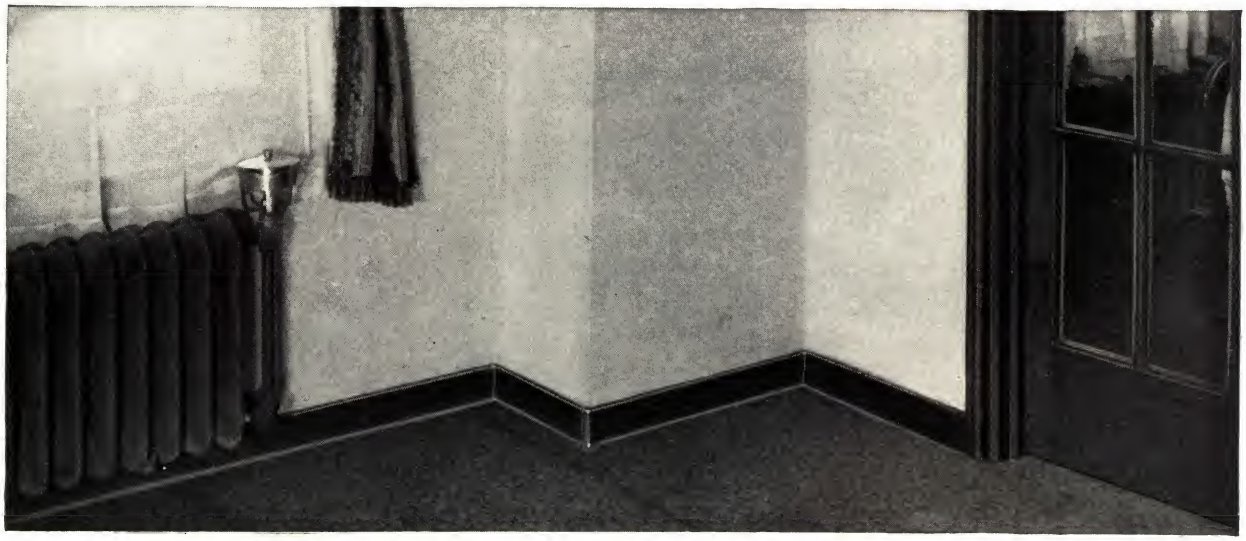
GAUGE AND SIZE—All sections of either four inch or six inch nominal height are available fabricated from 20 or 18 ga. extra tight coat galvanized steel sheets. Coves of two member sections are furnished in 18 ga.

SPECIAL CONSIDERATIONS—In the case of No. 202 base only, it is necessary to specify the floor flange depth as ¼ in., ½ in., or ⅞ in., as may be needed to suit various floor finishes. Grouting of all plastered-in types assures maximum fire-safeness and serviceability.



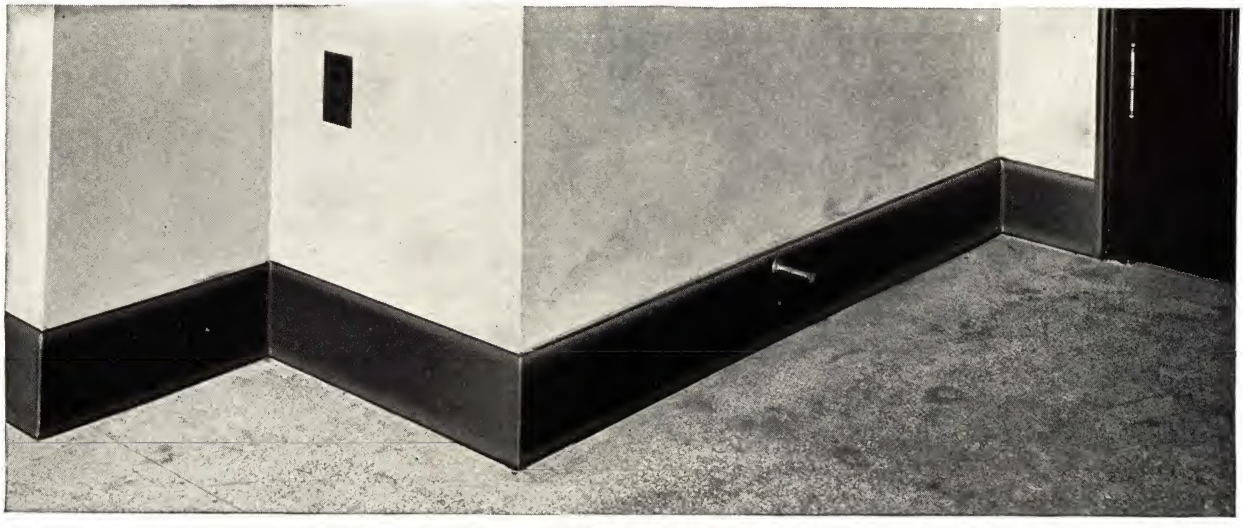
FULL SIZE DETAILS FURNISHED ON REQUEST

METAL BASE ILLUSTRATED



Knapp No. 207 Metal Base

Knapp No. 204 Metal Base with Metal Plinths



Knapp No. 203 Metal Base

FULL SIZE DETAILS FURNISHED ON REQUEST

WYR-WAY BASE BRANCH CIRCUIT SYSTEM 9/9

GENERAL DESCRIPTION and EXPLANATION

Wyr-Way Base consists of two wire-carrying raceways with an easily removable cover plate concealing them. The upper raceway is designed to carry low tension wires, such as telephone, signal circuits, telegraph wires, etc. The lower raceway is designed to carry high tension wires for all lighting or power appliance requirements. The wires are laid in the raceways directly and do not have to be installed in conduits. The cover is easily removable when needed and is in no sense a loose cover.

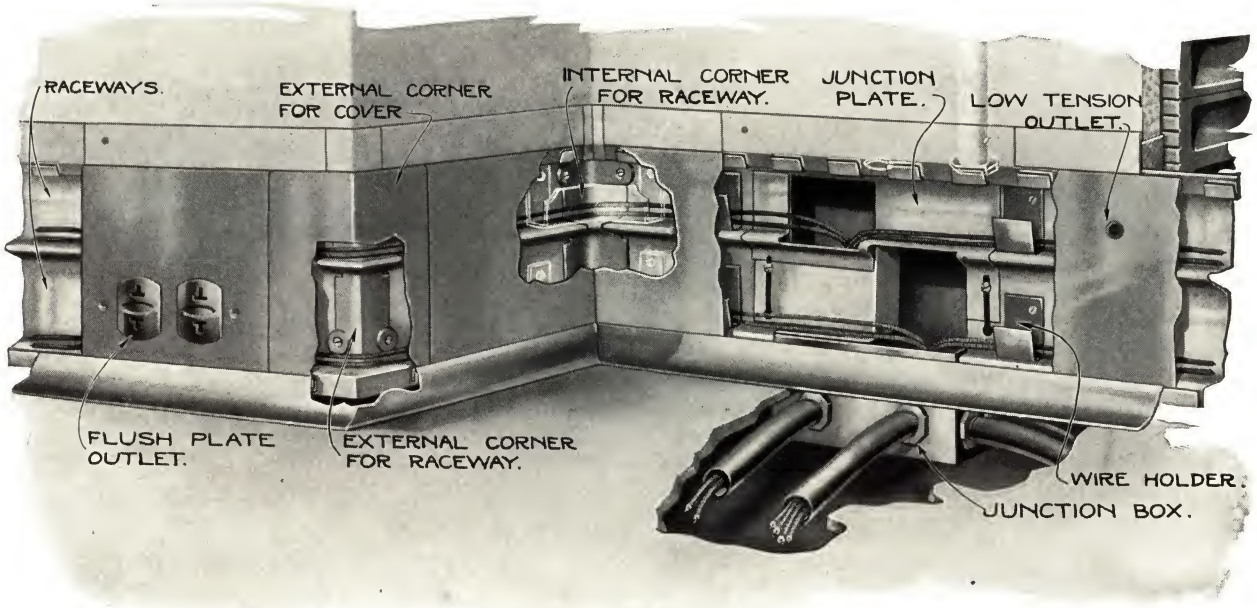
Junction boxes of types depending on local requirements are provided so that the circuits may be conveniently brought to the raceways. Cast iron corner fittings for the raceways are provided to eliminate the necessity for mitering at corners. Flush plates prepared for convenience outlets are provided so that they may be inserted at any point in the base for present or future outlets. The low tension outlets may be obtained by drilling a hole anywhere in the cover plate in front of the upper raceway.

A floor member is provided so as to complete the artistic effect of the base and give a sanitary finish at the floor line.

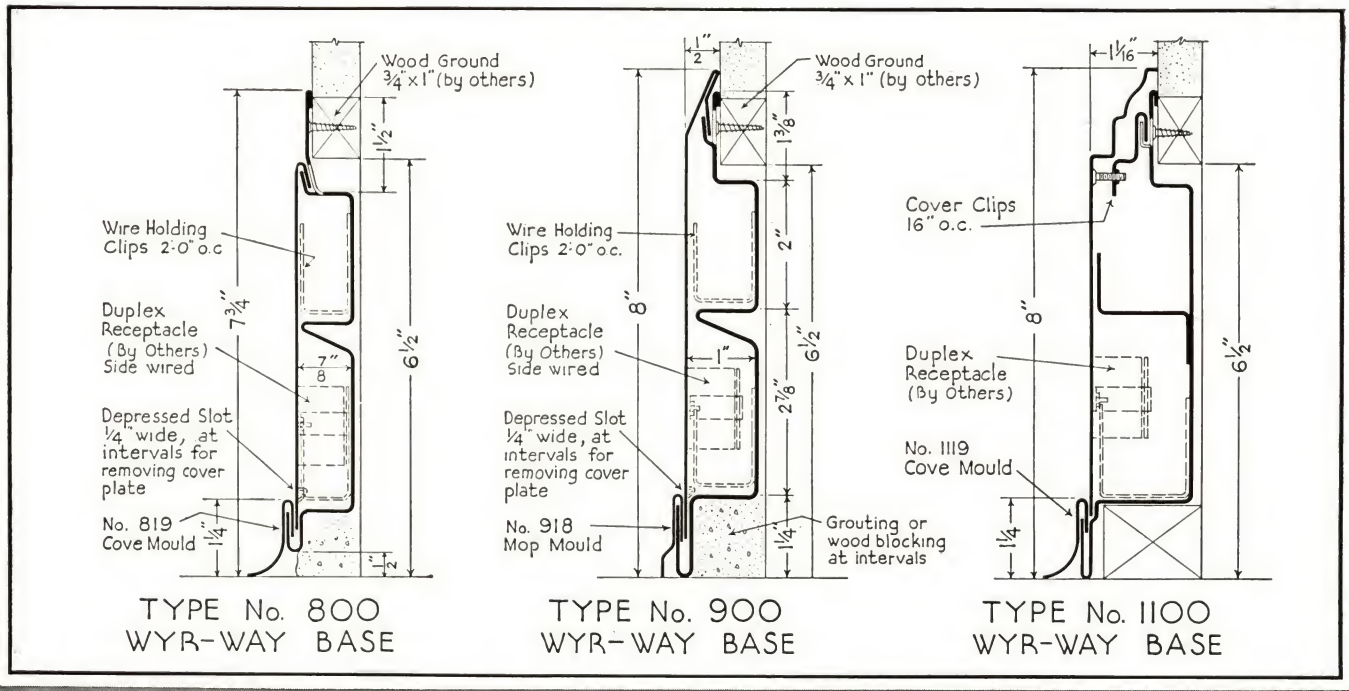
Wyr-Way is made with single, double and triple raceways to meet any and all wiring requirements.

Individual catalogs, describing No. 800, No. 900 and No. 1100 Wyr-Way Base with complete details of junction boxes and corner fittings, will be sent on request.

(All Wyr-Way Inspected and Labeled by Underwriters' Laboratories, Inc.)



Wyr-Way Base Type No. 800



FULL SIZE DETAILS FURNISHED ON REQUEST

9/9 METAL DOOR AND WINDOW CASINGS

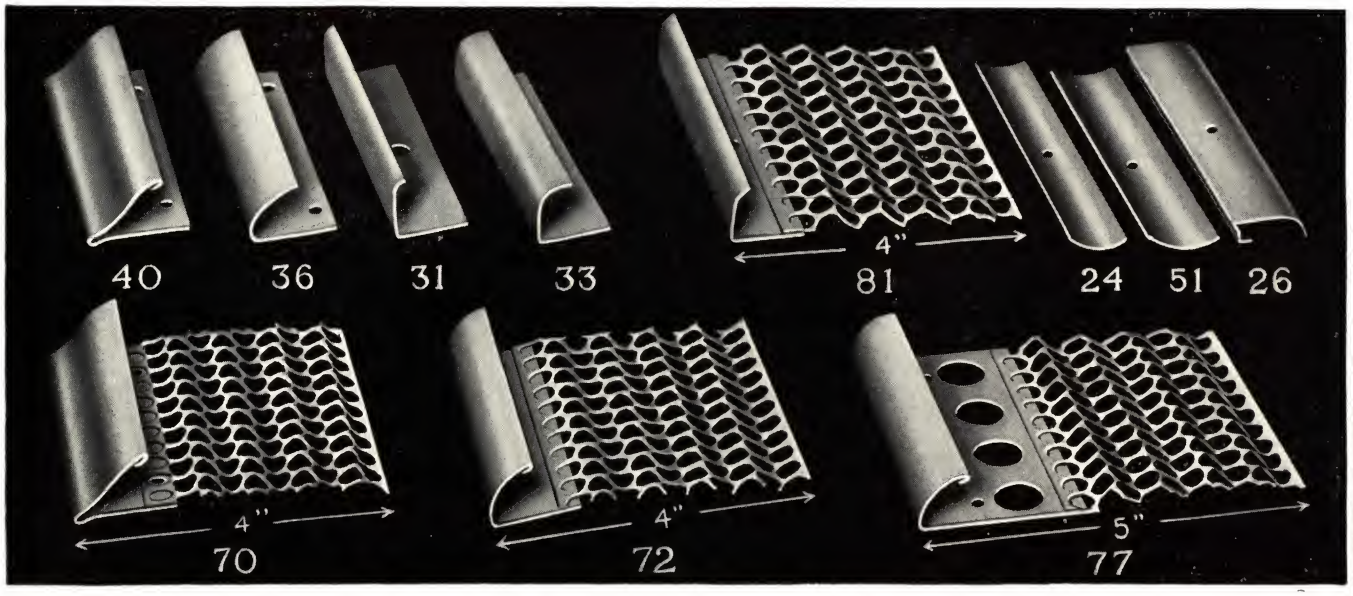
METAL AND GAUGES—Metal used for casings is all extra tight coat galvanized steel (hot process). The standard gauges for casings are 24 and 20.

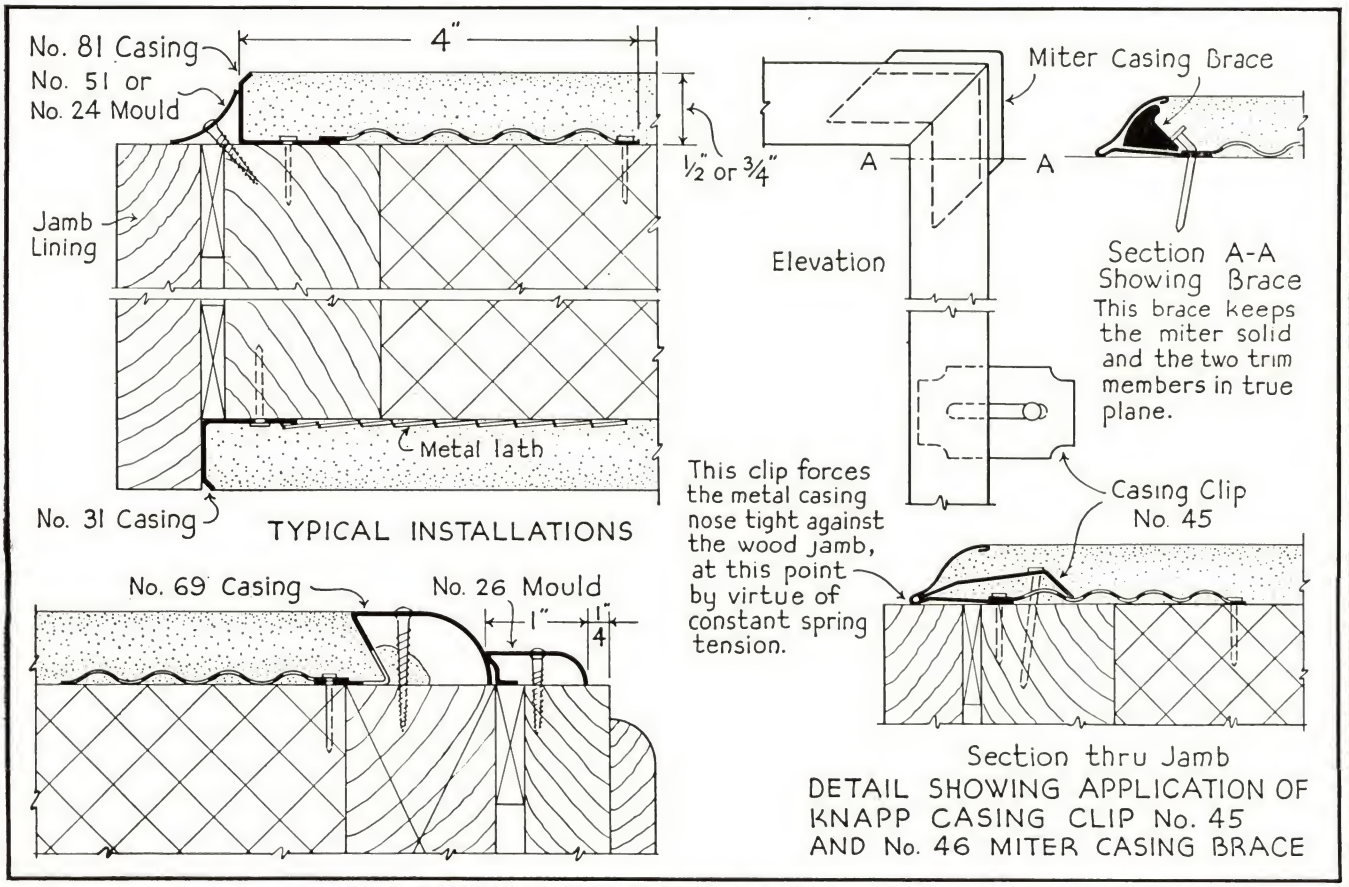
FINISH—The exposed surface of the casings is given **Knapp Special Primer** at the factory. This functions not so much as a protection to the metal (which is extra tight coat galvanized) as it is a necessary ground primer for subsequent decoration.

CLIPS AND MITERS—In using flush-with-the-plaster casings, a holding clip (No. 45) has been developed which it is desirable to use. (See illustration.)

For reinforcing the miters, the cast iron miter brace No. 46 is used.

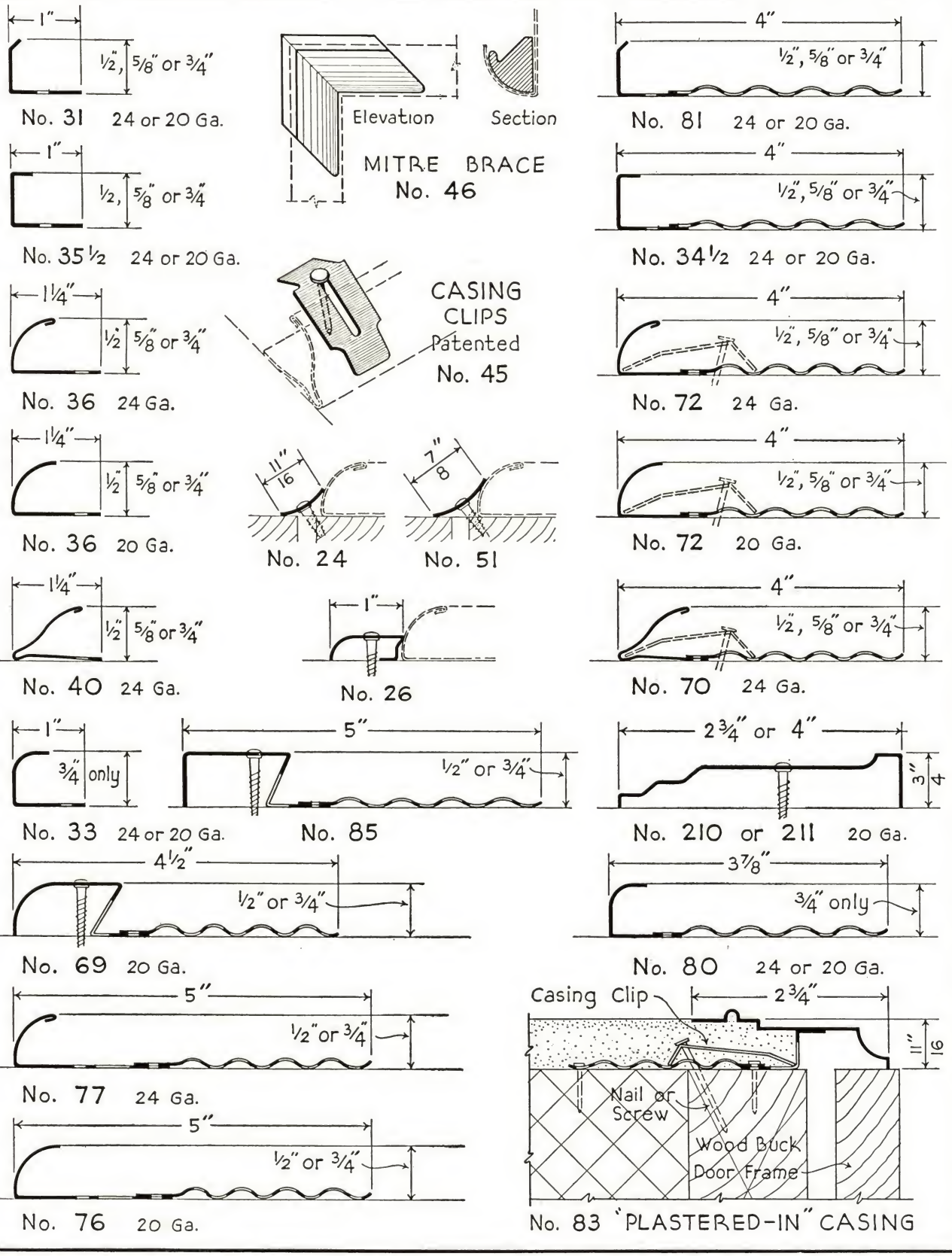
GROUND—All plastered-in casings are made for either a ½ inch or ¾ inch plaster ground thickness. Specifications should mention the plaster ground thickness.





FULL SIZE DETAILS FURNISHED ON REQUEST

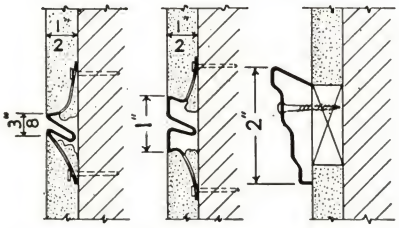
DETAILS—METAL DOOR AND WINDOW CASINGS



FULL SIZE DETAILS FURNISHED ON REQUEST

MISCELLANEOUS METAL TRIM

PICTURE MOULDS



No. 23—Concealed Flush Metal Picture Mould.

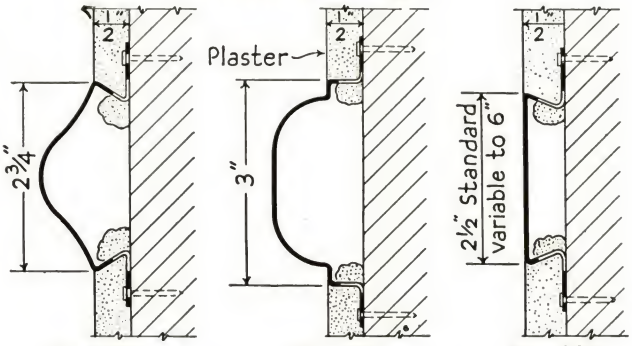
No. 20—Flush Metal Picture Mould, exposed faces.

No. 208—Ornamental applied Picture Mould.

End stop fitting for No. 208 pattern 352 R and L.

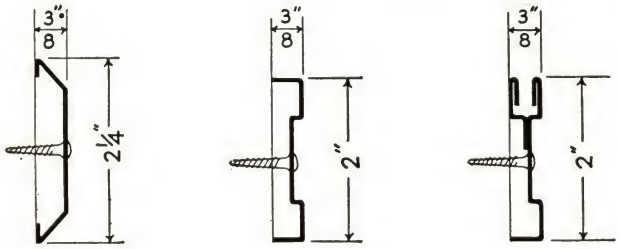
Nos. 20 and 23 plastered-in types furnish a method of supporting pictures and other hanging objects and are erected before plastering and act as a ground to accomplish a true plaster wall line. The supporting wings are flexible enough to be adjusted to different thicknesses of plaster.

CHAIR RAILS

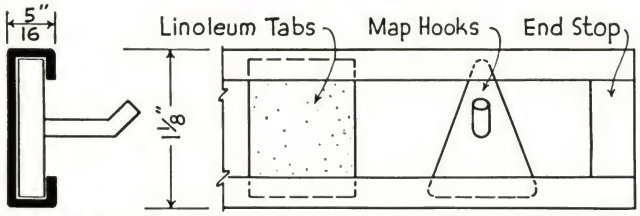


Corner Fittings Available for Chair Rails 300-301

DADO MOULDS



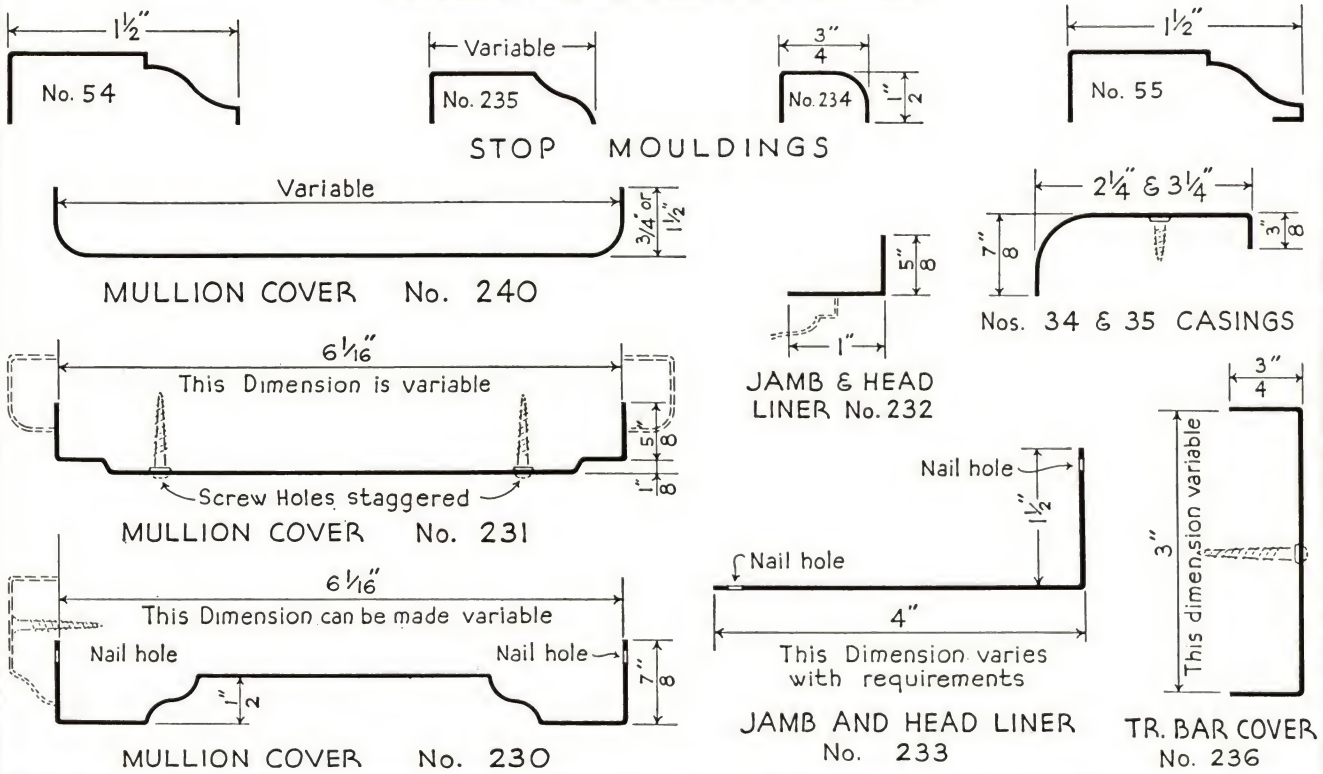
MAP RAILS



Knapp No. 19 is furnished with the following standard equipment; one hook for each two lin. ft. rail; two linoleum tabs for each lin. ft. of rail; and 2 end stops for each stock length of rail. Stock lengths, 6 ft., 8 ft. and 10 ft. Hooks are adjustable and removable.

This rail will fit Knapp blackboard trim and may also be used with wood or other trim items.

MULLION COVERS AND STOP MOULDS



FULL SIZE DETAILS FURNISHED ON REQUEST

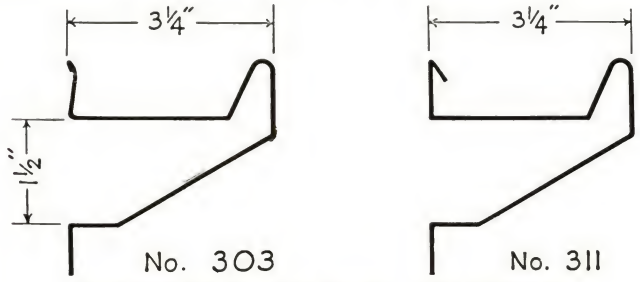
BLACKBOARD TRIM AND CHALK TROUGHS 9/9

Applied Type

The "applied" types of chalk troughs and trim are erected after the plastering is completed. They are attached to wood grounds with oval head countersunk screws. The typical Detail of Construction illustrates a standard installation of this type of finish.

Chalk Troughs

Knapp standard troughs are made from 22 gauge tight coat galvanized steel; they are No. 303 and No. 311. The number 311 has the top flange turned out to provide a dust deflector; No. 303 is a little lower priced. Stock lengths are 6′ 0″, 8′ 0″ and 10′ 0″. End stops are available.



STANDARD CHALK TROUGHS

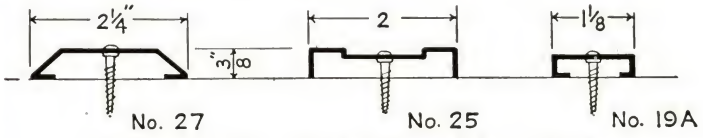
Inserts and Dust Pans

Chalk troughs may be used without either insert or dust pans. We have available our No. 303-I perforated metal insert which will fit either the No. 303 or the No. 311 trough; our No. 311-P dust pan, which has a flat perforated cover or our No. 314 dust pan, which has a slotted removable cover. Stock lengths of inserts and pans are 3′ 0″, 4′ 0″ and 5′0″.

Blackboard Trim

Nos. 25 and 27 are available in 10′ 0″ stock length. These sections may be used with our standard chalk trough. We have a complete line of cast iron flush corner fittings consisting of 90° corners, tees and crosses. Knapp map rail may be used with either of these sections.

No. 19-A provides a simple effective finish where heavier trim members are not desired. This number must be mitered at the job as no fittings are available. It is desirable to specify a metal ground for this item as its narrow face will not permit the use of an effective wood ground. This trim harmonizes nicely with Knapp map rail.

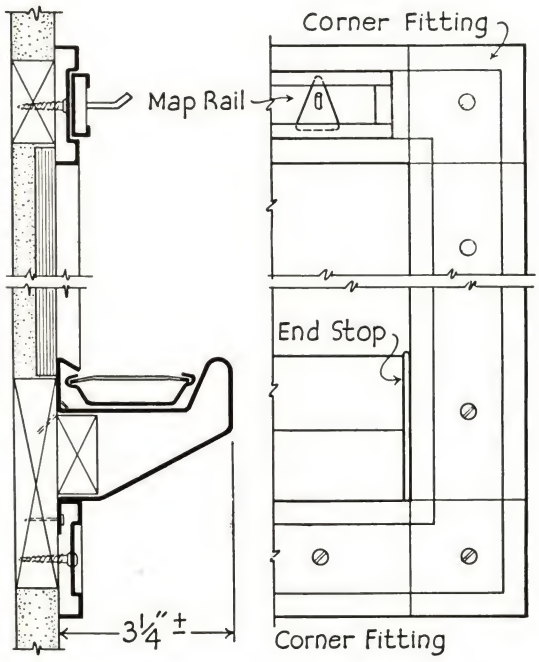


STANDARD BLACKBOARD TRIM

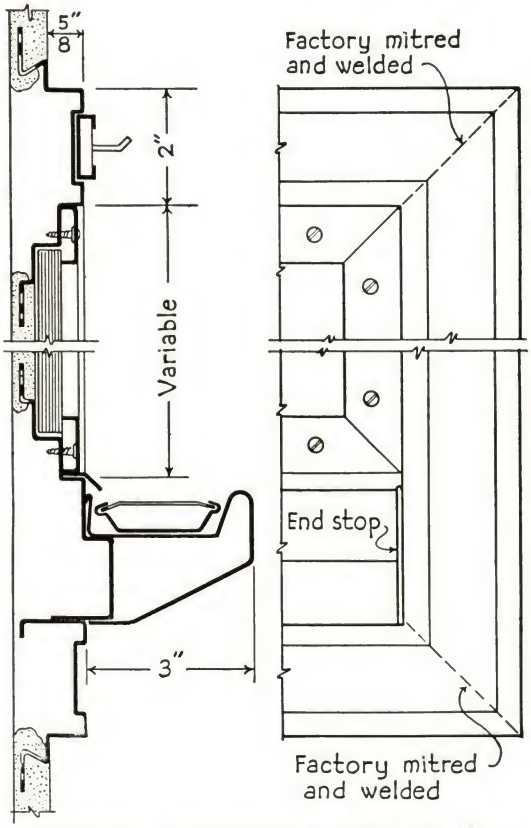
"Plastered-In" Type

The Knapp No. 313 "plastered-in" and self-grounding unit is erected before the plastering is started. It is factory assembled to predetermined sizes. Corners are mitered and welded and ground smooth. The chalk trough and stop mouldings are cut to length or mitered, punched and countersunk and shipped separate to be applied after the plastering and blackboard installations have been completed.

This design assures a straight true installation; it provides screed lines for the plasterers' work and a positive seat and support for the slate blackboard.



TYPICAL CONSTRUCTION DETAIL
"APPLIED" BLACKBOARD TRIM



TYPICAL CONSTRUCTION DETAIL
"PLASTERED-IN" No. 313
BLACKBOARD TRIM

FULL SIZE DETAILS FURNISHED ON REQUEST

9/9 KNAPP FLUSH ACCESS DOORS

SPECIFICATIONS

Frame.....18 ga. Steel
Door.....14 ga. Steel
Flange.....Perforated for Plaster Key
Latch..... Brass, Cam Type
Operator..... Flush, Slotted Type
Anchors.....Adjustable, 4 per Frame
Hinges.....Brass Pin, Captive Type
Finish.....Special Gray Prime Coat

(If desired, a 3-in. wide Perforated and Crimped Plaster Reinforcing Strip can be spot welded to frame.)

STOCK SIZES

Catalog Number	Door Opening Size	Rough Opening Size
1	7½x11½	8x12
2	12½x16½	13x17
3	14½x18½	15x19
4	14½x24½	15x25
5	18½x24½	19x25
6	18½x30½	19x31

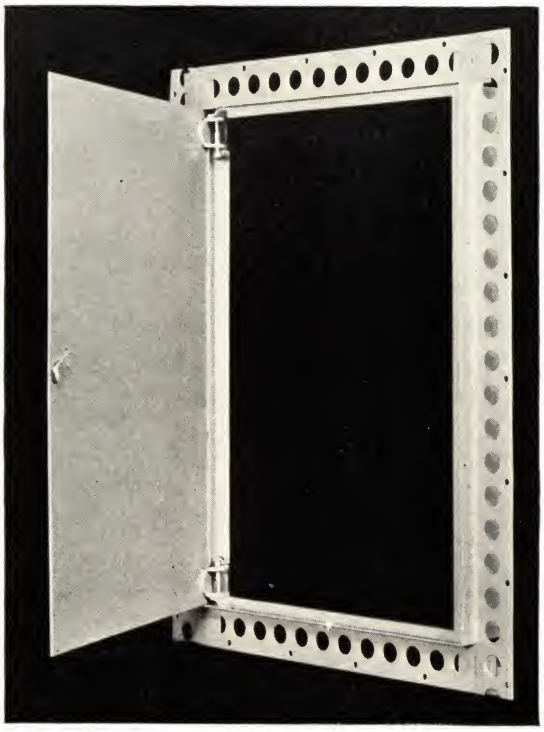
Special sizes furnished on order.

GROUNDS AND SCREEDS

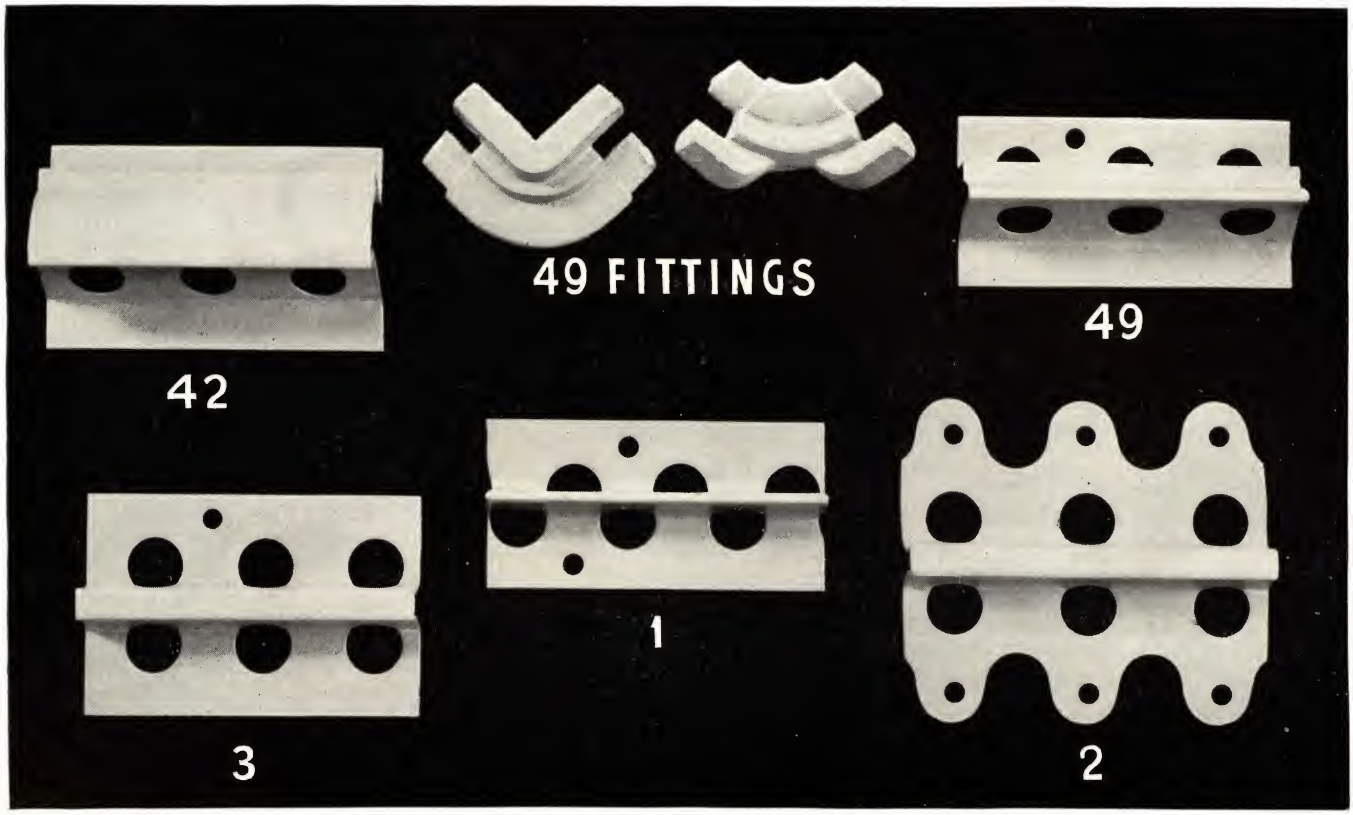
Base Screeds—No. 49 has about ⅜ in. exposed metal; No. 42 has about ⅞ in. exposed metal. Both screeds have ⅜ in. projection from face of plaster.

Complete line of cast iron corners and end stops are available for both No. 42 and No. 49.

Base Grounds—All base grounds are available in ½ in., ⅝ in. and ¾ in. depth. No. 1 is standard base ground and separator; No. 2 is wide nose, scalloped wing; and No. 3 is wide nose, but without the scallops.



Corner Grounds—Nos. 4½—17—44 shown on opposite page provide a choice of square or radial grounds for internal corners.



FULL SIZE DETAILS FURNISHED ON REQUEST

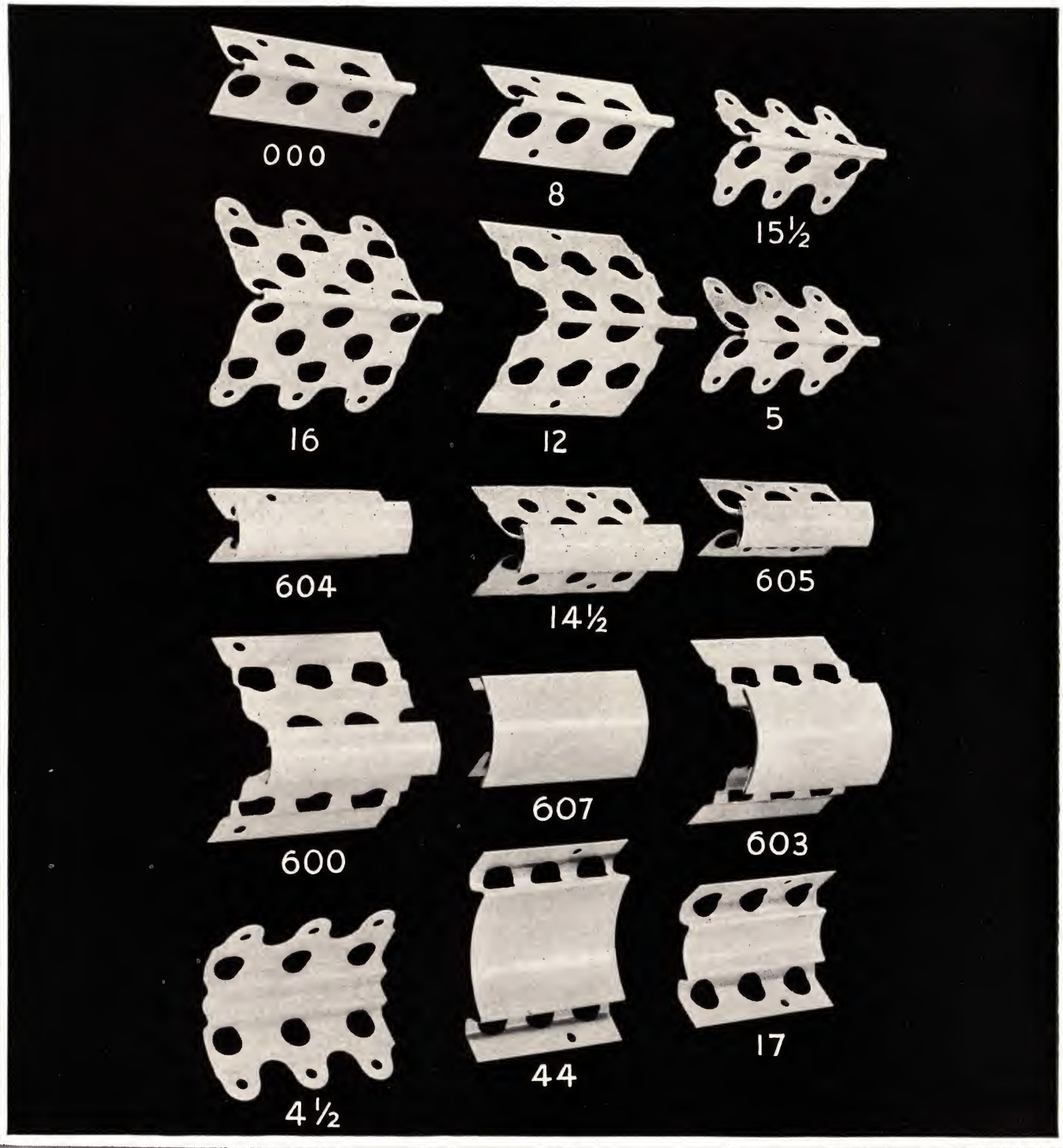
CORNER BEADS

All Small Nose and all Bull Nose corner beads are available in the following standard stock lengths: 6, 7, 8, 9, 10 and 12 ft.

All beads manufactured in 24 and 26 gauge—formed from tight coat galvanized steel sheets. Beads can also be made in brass, zinc and copper. All bull nose beads are available with reinforced nose.

FLANGE WIDTHS

Small Nose .....000 —1¼"
Small Nose ..... 8 —1½"
Small Nose ...5 and 15½—1¾"
Small Nose ..... 12 —2½"
Small Nose ..... 16 —2½"
¾" rad. Bull Nose...604 —1¼"
¾" rad. Bull Nose...605 —1½"
¾" rad. Bull Nose... 14½—1¾"
¾" rad. Bull Nose.... 14—2½"
1½" rad. Bull Nose....607—1½"
1½" rad. Bull Nose....603—2⅜"



FULL SIZE DETAILS FURNISHED ON REQUEST

ARCHITECTS HANDBOOK ON

KNAPP

Knapp
SANITARY METAL TRIM
TRADE MARK

METAL TRIM

KNAPP BROS·MANUFACTURING CO·

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MILCOR MANUAL

FIREPROOF BUILDING PRODUCTS

MILCOR STEEL COMPANY

MILCOR STEEL COMPANY

METAL LATH AND ACCESSORIES

THE COMPANY

The Milcor Steel Company is the foremost national manufacturer of "Firesafe" sheet metal products, largely consumed by the building industry. Constant improvement in design, materials, workmanship, and methods of production has marked the company's progress, until today Milcor Products are accepted nationally as standards of quality.

DIVERSIFIED LINE OF PRODUCTS

In addition to the line of Metal Lath, Plastering Accessories and Metal Trim, including Casings, Stools, Metal Bases, etc., described in this catalog, the Milcor Steel Company is among the largest manufacturers making a complete line of metal building products.

MANUFACTURING AND DISTRIBUTING FACILITIES

The Milcor Steel Company's plants consist of over a million (1,000,000) square feet of floor space and its properties cover forty (40) acres of land. In addition to its main comparatively new plants in Milwaukee, Wisconsin, and Canton, Ohio, equipped with modern machines, there are plants in Chicago, Illinois, Kansas City, Missouri, and La Crosse, Wisconsin. Sales offices are maintained in all principal centers. A warehouse is also maintained in Atlanta, Ga.

CATALOGS AVAILABLE

(Size 8½x11 inches to fit filing cabinet.)

No. 20-G "The Milcor Manual"—a complete catalog on metal lath and allied products, including standard architectural specifications for "Firesafe" construction.

No. 24-A "Milcor Architectural Sheet Metal Guide"—a complete catalog on Roofing, Cornices, Architectural Ornaments, Ventilators, Skylights, etc.

No. 28 "Milcor Sheet Metal Hand Book"—A large catalog on general sheet metal products manufactured by the Milcor Steel Company.

No. 33-C "Milcor Steel Ceiling and Walls" contains many designs of "Perfect-fit" Ceilings and Walls manufactured by the Canton, Ohio, Plant.

No. 35 "Milcor Furnace Pipe and Fittings."

No. 36 "Milcor Metal Ceilings and Walls"—Illustrating and describing many of the attractive designs of Milcor Metal Ceilings and Walls.

No. 100-B "Milcor Metal Trim."

MILCOR PRODUCTS—SPECIAL FEATURES

EXPANSION WING FEATURE

One of the outstanding features of Milcor Lathing Accessories, protected by patent, is the expanded metal lath wing which forms an integral part of the corner bead, picture mould, base screed, metal casing, and other products. The wings of various widths are formed of ⅜-inch diamond mesh expanded metal lath.

The advantages over the older types of plastering accessories are apparent:

(1) The network of the expanded metal wings assures keying of the plaster close up to the base of the exposed metal member.

(2) There is a definite economy in labor due to the simplicity of erection—these products can be wired, stapled, nailed or spotted, as best adapted to the particular type of wall construction, without the use of clips.

WIDE RANGE OF MATERIALS

Milcor Products as specified under each item are furnished not only in various weights of metal to adequately adapt them to a variety of spans and uses, but they are made as well in a wide range of selected metals and protective finishes.

Painting—All black metal lath is painted after cutting, expansion and heat treating, with Milcor Special Elastic Asphaltum Paint.

Galvanizing—All galvanized sheets are tight coated with new, pure zinc spelter before cutting and expansion.

Sheet Steel—Products so specified are cut from the highest grade of carefully inspected prime open-hearth sheet steel, either painted or galvanized as noted.

Copper Alloy Steel—The peculiar ability of copper alloy steel to resist corrosion is well known. Milcor "Copper Alloy" is of standard quality, carefully controlled for uniformity in production.

Products are furnished in Copper Alloy Steel either painted or galvanized as noted.

Armco Ingot Iron and Toncan Iron—Milcor Products are made in both Armco Ingot Iron, the purest iron made, and Toncan Iron, famous for its corrosion-resisting qualities. The superiorities of these metals have been proved beyond any doubt.

Products are furnished in Armco Ingot Iron and Toncan Iron either painted or galvanized as noted.

Anaconda Pure Copper—Under extreme conditions, where destructive acid fumes, salt air or other abnormal atmospheric attack is apt to exist, pure Anaconda copper is frequently used. This copper has great tensile strength and stiffness in addition to its value as positive resistance to corrosion.

Products so noted are available, cut from pure 16-oz. cold rolled Anaconda copper.

Pure Zinc—Products so noted are available, cut from pure zinc Nos. 11 and 12.

LABELS

Every bundle of Milcor Lath is conspicuously labeled with a distinctive metal tag vouching clearly for weight and particular metal used. Thus verification of specification requirements is easily insured.

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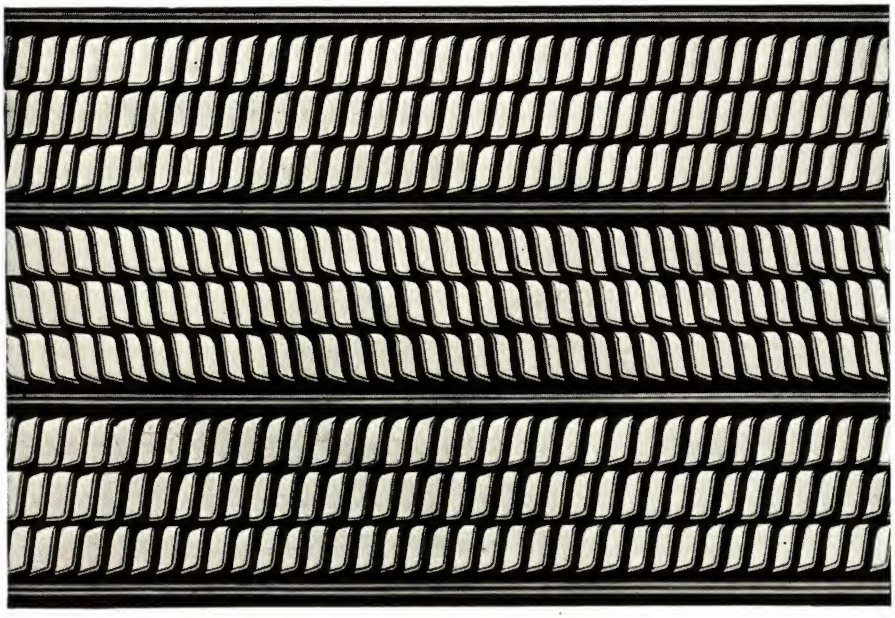
Send Inquiries to

MILCOR STEEL COMPANY

So. 41st & W. Burnham Sts., Milwaukee, Wis.

KUEHN'S SPECIALMESH

A FINE MESH LATH FOR WALLS AND CEILINGS



NOTE THESE FEATURES

THEY ARE IMPORTANT

(1) Scientifically Designed Mesh

Tests show this size mesh to give the most positive plaster grip.

(2) Positive Rigidity

There are 16 ribs to a sheet of Kuehn's Specialmesh, which are corrugated to make them doubly rigid.

(3) No Plaster Waste

It is practically impossible to waste plaster (as ordinarily applied) by forcing an unnecessary amount through Kuehn's Specialmesh.

(4) Easy to Apply

It has no sharp edges to lacerate the lather's hands.

DESCRIPTION

GENERAL CHARACTERISTICS

Kuehn's Specialmesh is a new rib lath specially adapted for interior walls and ceilings. The meshes are so formed that in plastering the slightest pressure of the trowel completely imbeds the lath, and due to the small mesh, waste of plaster is eliminated. The longitudinal stiffening ribs are 3/8 inch wide, spaced 1 5/8 inches on center and are connected at 1/4-inch intervals by strands. These strands, in turn, are strongly reinforced at their junctures by stiffening members (two between each pair of ribs). All sheets are squared on both ends.

Kuehn's Specialmesh is scientifically designed to incorporate the best features of every type of such lath made, and to offer entirely new advantages.

RECOMMENDED WEIGHTS FOR MAXIMUM SPACING OF SUPPORTS

(lbs. per sq. yd.)

Weights recommended	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
2.75	16	16	16	12
3.0	19	19	19	16
3.4	19	19	19	16
4.0	19	19	19	19

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.

STEEL, PAINTED—2.75, 3.00, 3.40, 4.00.

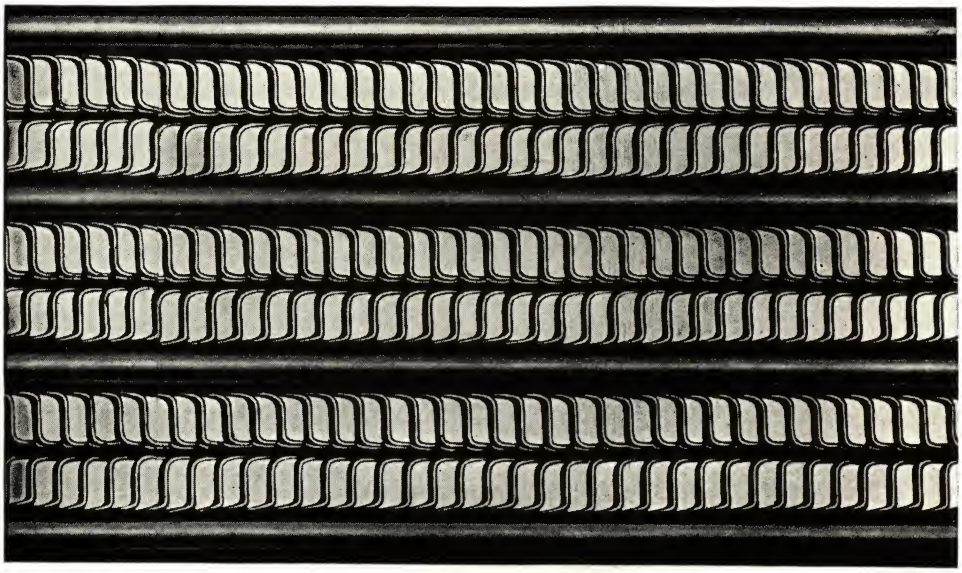
STEEL, GALVANIZED—3.40.

COPPER ALLOY STEEL, PAINTED—3.40.

ARMCO INGOT IRON OR TONCAN IRON, PAINTED—3.40.

STAY-RIB METAL LATH · · No. 1

MILCOR



DESCRIPTION

No. 1 Stay-Rib Lath is ideally adapted for interior plaster (especially ceilings).

It is designed for maximum rigidity and, due to its added metal surface, unusual economy of material—an adequate key, however, is assured. The longitudinal stiffening ribs are ½ inch wide, spaced 1¾ inches on center inter-connected at ¼-inch intervals by strands. These, in turn, are strongly reinforced at their centers by a stiffening member.

For both ceiling and wall plaster reinforcement, Milcor Stay-Rib No. 1 is unusually satisfactory. The rigidity of its rib and the character of its expanded design are factors in preventing plaster from falling during application. For suspended ceilings, Stay-Rib No. 1 saves money because it is exceptionally stiff and rigid. Fewer supporting runner channels and less labor are required because the spacing can be made much wider without impairing safety.

NO. 1 MILCOR METAL LATH CLIPS

Used with No. 2 Stay-Rib Metal Lath (see opposite page).

Milcor Lath Clip No. 1 is made in two parts: A flat metal strip and a strong "U" shaped tie wire. One end of the strap is formed into a hook shape at the factory, the other end is clinched around the flange of the beam on the job.

The photo below shows Stay-Rib Lath secured to I-Beam with the Milcor Metal Lath Clip. Note method of twisting wires.

NO. 1 CLIP

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.

STEEL, PAINTED—2.75, 3.00, 3.40, 4.00.

STEEL, GALVANIZED—3.40.

COPPER ALLOY STEEL, PAINTED—3.40.

ARMCO INGOT IRON, OR TONCAN IRON PAINTED—3.40.

RECOMMENDED WEIGHTS (lbs. per sq. yd.)

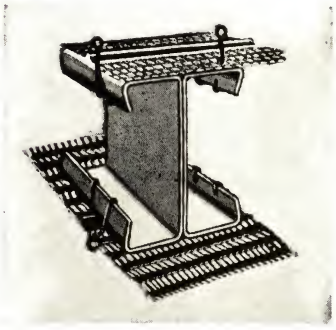
Weights recommended	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
2.75	16	16	16	16
3.0	19	19	19	16
3.4	19	19	19	19
4.0	19	19	19	19

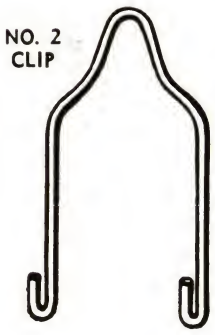
3/8" STAY-RIB METAL LATH · · No. 2

NO. 2 MILCOR METAL LATH CLIP

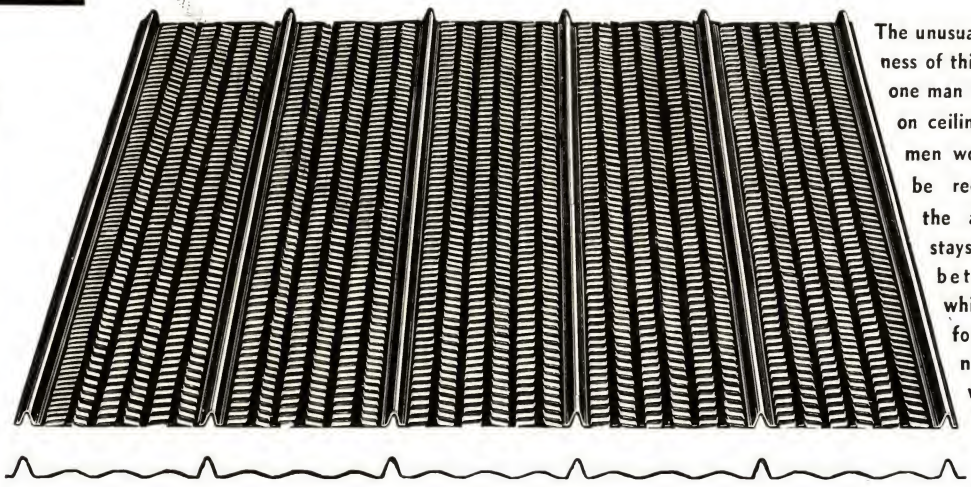
No. 2 Clip with design to facilitate the use of Stay-Rib Metal Lath in connection with metal lumber. This clip saves time and labor and insures maximum safety and perfect workmanship. The prongs are hooked over the edge of the metal lumber and twisted until the lath is securely fastened.

Weight of No. 2 Clip per thousand —9 lbs. Packed in cartons of 1000.





NO. 2 CLIP



The unusual lateral stiffness of this lath enables one man to put a sheet on ceilings where two men would ordinarily be required. Note the angle of the stays or strands between ribs which accounts for a stiffness not possible with diamond mesh lath.

DESCRIPTION

No. 2 Stay-Rib has 3/8-inch heavy longitudinal ribs spaced 4.8 inches on center with five stiffening members between ribs forming adequate reinforcement for the connecting strands spaced at 1/4-inch intervals.

It is ideal for all purposes where a self-furring lath is required.

Due to the strength and rigidity of the ribs, this lath effects very definite economies in both labor and material on furred or suspended ceilings where wide spacing of supporting cross channels is possible.

It is used extensively without supporting furring, **for ceilings attached directly to the joists** beneath steel dome reinforced concrete construction. Also ideal for both **ceilings and reinforcement** for floor slabs in **standard bar joist** floor and roof construction and for both **hollow and solid plaster partitions** in conjunction with metal studs or channels.

RECOMMENDED WEIGHTS (lbs. per sq. yd.)

Weights recommended	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
2.75	19	19	19	19
3.0	24	24	19	19
3.4	31 1/2	31 1/2	24	24
4.0	31 1/2	31 1/2	24	24

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete descriptions of materials, finishes, etc., see page 2.

STEEL, PAINTED—3.00, 3.40, 4.00.

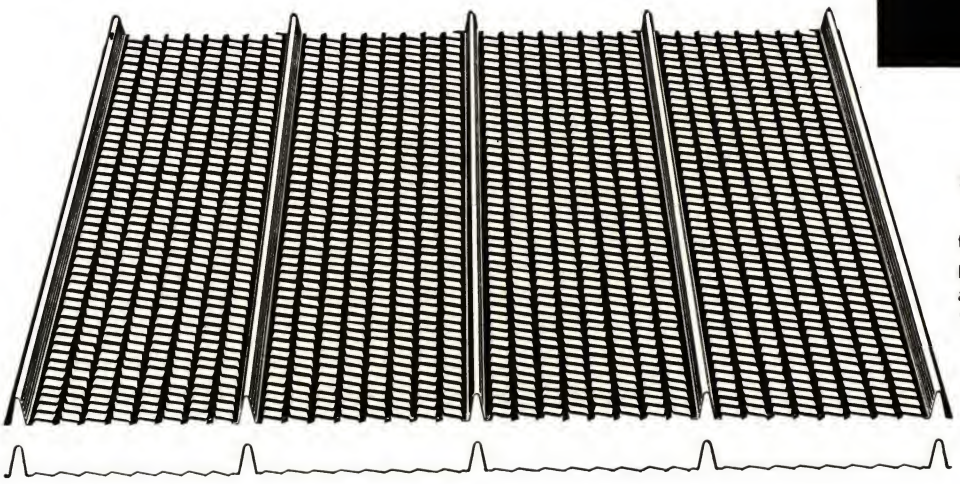
STEEL, GALVANIZED—3.40.

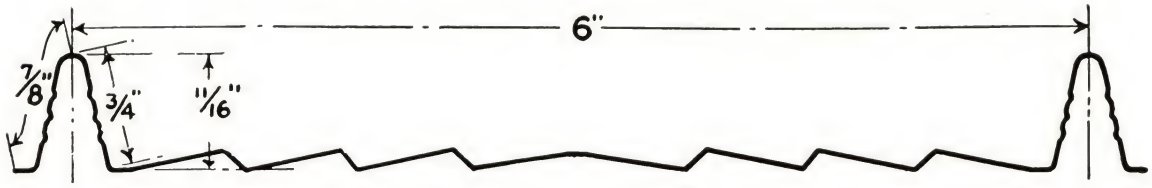
COPPER ALLOY STEEL, PAINTED—3.40.

ARMCO INGOT IRON OR TONCAN IRON, PAINTED—3.40.

3/4" STAY-RIB METAL LATH · · No. 3

MILCOR





MILCOR RIB LATH CLIP

The Milcor Rib Lath Clip illustrated on Page 4 is recommended particularly for safety, convenience and speed of erection where steel I-Beam construction is used.

DESCRIPTION

No. 3 (¾ inch) Stay-Rib has ¾-inch heavy longitudinal ribs spaced 6 inches on center, with seven stiffening members between ribs, forming adequate reinforcement for the connecting strands spaced at ¼-inch intervals. The Milcor process of forming the heavy ribs is important. They are cold-drawn—not stamped—straight, true and uniform in shape with the sides of the rib sloped to insure maximum rigidity.

This lath is designed primarily as reinforcement for concrete floors and roofs, serving in addition as a form upon which wet concrete is poured. In this capacity it is most extensively used in connection with steel and bar joists. The lath may also be used in solid slab construction and may be curved to any required form. It is recommended that wherever curved sheets are required, the curving be accurately done **at the factory.**

Besides its adaptability for flat roof reinforcing, it is unexcelled in the construction of fire-safe pitched roofs, saw-tooth and monitor-type roofs and their adjoining wall or gable constructions.

No. 3 Stay-Rib is admirably adapted to the construction of solid plaster partitions where, due to the rigidity and reinforcing qualities of the ribs, no studs are required—the lath spans vertically from floor to ceiling.

Laid over wood joists, it is ideal as reinforcing for the concrete base for tile, terrazzo or composition flooring.

SPECIFICATION DATA

SHEET SIZE

The covering width of each sheet is 24 inches. **Standard sheets are 4, 5, 6, 7, 8, 9, 10, 11, and 12 feet long.** Sheets of intermediate length can be furnished, cut to exact lengths without extra cost (except that of stock waste).

MATERIALS AND WEIGHTS (lbs. per sq. ft.)

Note: For complete descriptions of materials, finishes, **etc.,** see page 2.

STEEL, PAINTED—.50; .60; .75.

STEEL, GALVANIZED—On order. .50; .75.

COPPER ALLOY STEEL, PAINTED—.75.

ARMCO INGOT IRON OR TONCAN IRON, PAINTED—.75.

CROSS SECTIONAL AREAS (sq. in. per ft. width.)

.50—.1235; .60—.1482; .75—.1977.

3/4" STAY-RIB METAL LATH · · No. 3

Milcor ¾-inch Stay-Rib Metal Lath No. 3 is admirably suited for use in solid partitions, with ribs perpendicular to the floor. No upright channels are required.

The lath sheets may be wholly or partially curved to any desired radius.

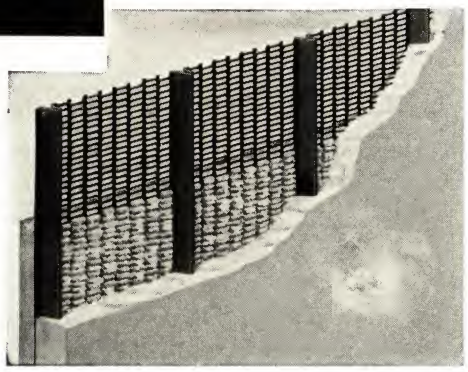


TABLE OF TOTAL SAFE LOADS

FOR CONCRETE SLABS REINFORCED WITH ¾-INCH STAY-RIB NO. 3

Assumed Conditions

Loads given are Live Loads plus Dead Loads.

Stress in steel—16,000 lbs. per sq. in.

Stress in concrete (fc) variable as per table—given in pounds per square inch.

Ratio on Modulus of Elasticity of Steel (Es) to Modulus of Elasticity of Concrete (Ec) = n = 15.

Distance of Center of Gravity of lath above bottom of sheet—.163 of an inch.

Resisting Moment (R. M.)—given in inch pounds per foot width.

Table based on moment of $\frac{WL}{10}$

Thickness of concrete, in.	Weight of slab, per sq. ft., lbs.	Weight of slab with ½ in. portland cement plaster on under side, lbs.	Weight of lath per sq. ft., lbs.	Resisting moment (R. M.) inch lbs. per foot of width	Stress in concrete in lbs. per sq. in. (fc)	Total Safe Loads in Pounds per Square Foot for Spans as Indicated in Feet								
						3 ft.	4 ft.	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.	11 ft.
2	24	30	0.50	3230	540	299	168	108	75	55				
2	24	30	.60	3840	600	355	200	128	89	65	50			
2	24	30	.75	5050	690	468	263	168	117	86	66	52		
2½	30	36	.50	4150	460	384	216	138	96	71	54	43		
2½	30	36	.60	4940	520	458	258	165	114	84	64	51		
2½	30	36	.75	6490	620		338	216	150	110	85	67	54	
3	36	42	.50	5084	410	470	265	170	118	87	66	52		
3	36	42	.60	6049	460	560	315	202	140	103	79	62	50	
3	36	42	.75	7960	550		415	266	184	135	104	82	66	55
3½	42	48	.50	6000	380	555	312	200	139	102	78	62		
3½	42	48	.60	7160	420		373	238	165	122	93	74	60	
3½	42	48	.75	9440	490		490	315	218	161	123	97	78	65
4	48	54	.50	6960	350		363	232	161	118	91	72	58	
4	48	54	.60	8289	390		432	276	192	141	108	85	69	57
4	48	54	.75	10920	460		568	364	252	186	142	112	91	75

Note: This table should not be used unless under side of slab is given a coat of portland cement plaster ½ inch thick.

WEIGHTS OF LATH FOR CARRYING WET CONCRETE OVER VARIOUS SPANS

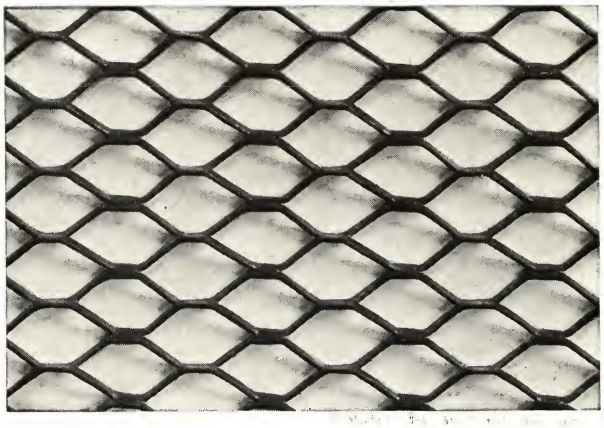
Weight of lath per sq. ft., lbs.	Allowable Spans for Wet Concrete Poured to Thickness Indicated				
	2-in. slab	2½-in. slab	3-in. slab	3½-in. slab	4-in. slab
0.50	3 ft. 3 in.	3 ft.	2 ft. 9 in.	2 ft. 6 in.	2 ft. 3 in.
.60	3 ft. 6 in.	3 ft. 3 in.	3 ft.	2 ft. 9 in.	2 ft. 6 in.
.75	4 ft.	3 ft. 9 in.	3 ft. 3 in.	3 ft.	2 ft. 9 in.

When longer spans than those given above are required, temporary supports should be used to maintain these maximum spacings.

NETMESH AND SMALMESH [EXPANDED DIAMOND MESH] METAL LATH

MILCOR

PLAIN



DESCRIPTION

Netmesh Metal Lath is $\frac{11}{32}$ inch by $\frac{9}{16}$ inch expanded Diamond Mesh produced by special machines and equipment, designed and built by Milcor engineers. Smalmesh is $\frac{9}{32}$ inch by $\frac{15}{32}$ inch expanded Diamond Mesh. Due to the close rigid mesh only a comparatively small amount of plaster is required to produce a perfect key resulting in plastering speed, ease and economy in plastering material.

Netmesh and Smalmesh are general utility laths ideally suited to the ordinary lathing need. They can be readily bent or formed for furred or ornamental members and for fireproofing of steel beams, girders, and columns.

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.
27x96 in., packed 10 sheets (20 sq. yds.) per bundle.
All sheets are squared on both ends.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete descriptions of materials, finishes, etc., see page 2.

STEEL, PAINTED—2.20, 2.50, 3.00, 3.40.
STEEL, GALVANIZED—2.50, 3.40.
COPPER ALLOY STEEL, PAINTED—3.00, 3.40.
ARMCO INGOT IRON OR TONCAN IRON, PAINTED—3.40.
NO. 11 PURE ZINC—2.8.
16-OZ. COPPER—3.0.

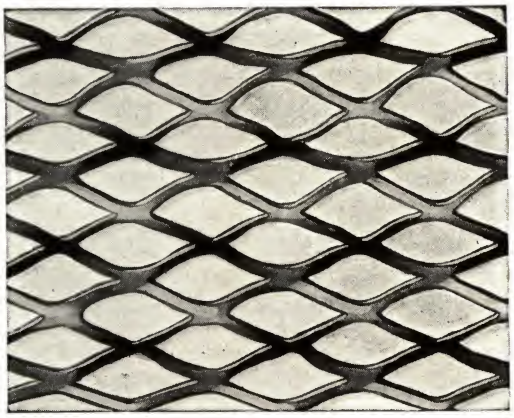
RECOMMENDED WEIGHTS (lbs. per sq. yd.)

Recommended weights	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
2.5	16	12	....	....
3.0	16	13½	13½	12
3.4	16	13½	16	13½

Note: Expanded Metal Lath weighing 2.2 lbs. per sq. yd. is regularly manufactured and available for use in partitions where Underwriter's Standards are not exacted; it is also suitable for corner reinforcements (Corner Lath).

CORRUGATED

(SELF-FURRING)



DESCRIPTION

Netmesh and Smalmesh Corrugated Metal Laths have the characteristics of standard mesh with corrugations added running longitudinally (the length of the sheet). These laths are self-furring—no furring strips are required. The corrugations act as furring and allow the plaster or stucco base to fill in between the lath and the supporting stud, sheathing or wall forming an adequate key.

These laths are ideal for exterior stucco work, either back plastered (spanning studs without sheathing) or applied directly over sheathing covered with waterproof paper.

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.
27x96 in., packed 10 sheets (20 sq. yds.) per bundle.
All sheets are squared on both ends.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.

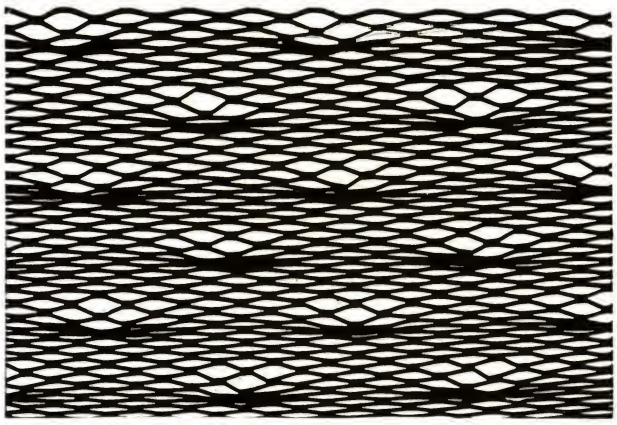
STEEL, PAINTED—2.20, 2.50, 3.00, 3.40.
STEEL, GALVANIZED—2.50, 3.40.
COPPER ALLOY STEEL, PAINTED—3.00, 3.40.
ARMCO INGOT IRON OR TONCAN IRON, PAINTED—3.40.

RECOMMENDED WEIGHTS (lbs. per sq. yd.)

OVER SHEATHING, ETC.—Studs 16 in. O. C., 2.50.
BACK-PLASTERED—Studs 16 in. O. C., 3.40.

FURLATH (SELF-FURRING EXPANDED DIAMOND LATH)
BIG-MESH (EXTRA LARGE DIAMOND FOR STUCCO)

FURLATH



DESCRIPTION

Furlath is a 3/8-inch mesh diamond expanded self-furring lath designed for exterior stucco. It has the general characteristics of Netmash (see page 8). The self-furring feature consists of staggered indentations or stools spaced 3½ inches apart horizontally and 2 inches apart vertically, which hold the body of the lath 3/8 of an inch away from the sheathing or wall. The deforming has a stiffening effect and assures complete embedding of lath with the first coat of stucco and locates the reinforcement centrally in a continuous sheet. Furlath should be secured to the sheathing at depressions or stools with six-penny nails.

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.
27x96 in., packed 10 sheets (20 sq. yds.) per bundle.
All sheets are squared on both ends.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.

STEEL, PAINTED—2.20, 2.50, 3.00, 3.40.
STEEL, GALVANIZED—2.50, 3.40.
COPPER ALLOY STEEL, PAINTED—3.00, 3.40.
ARMCO INGOT IRON OR TONCAN IRON, PAINTED—3.40.

RECOMMENDED WEIGHTS (lbs. per sq. yd.)

OVER SHEATHING, ETC.—Studs 16 in. O. C., 2.50.
BACK-PLASTERED—Studs 16 in. O. C., 3.40.

BIG-MESH

DESCRIPTION

Success with stucco requires not only a correct plastering base, but proper reinforcement as well. This reinforcement must be such that the plastering operation will easily and effectively make it an integral part of the stucco slab.

With these requirements in mind Milcor Big Mesh Stucco Lath has been designed essentially for stucco work applied either by hand or "gunite" machine. It is expanded into diamond meshes 1½x3 inches with heavy connecting strands.

Furring Nail

Since reinforcement is the essential feature, furring is necessary. This is accomplished economically by the Milcor Furring Nail, 1½ inches long, equipped with a spacing device held close up into the mesh angles, placing the wings so that the conveying strands rest on its top edge, 3/8 of an inch out from the sheathing.

SPECIFICATION DATA

MATERIAL

COPPER ALLOY STEEL, PAINTED.

SHEET SIZE AND WEIGHT (lbs. per sq. yd.)

48x96 in., 1.8 lbs., packed 10 sheets (35 5/9 sq. yds.) per bundle.
48x96 in., 3.6 lbs., packed 10 sheets (35 5/9 sq. yds.) per bundle.
All sheets are squared on both ends.

APPLICATION

Beginning at the top, apply with the long dimension horizontally. Bend sheets around all corners and angles. Lap sheets one full diamond at junctures. Space furring nails (staggered) not more than 10 inches O. C. vertically and 12 inches O. C. horizontally.

MILCOR SILVERCOTE
(INSULATING PLASTER BASE)
AND STEELKRAFT

MILCOR

INSULATING PLASTER BASE

This modern combination insulation and plaster base development consists of highly reflective, corrosion-proof insulation combined with Milcor Metal Lath—the recognized plaster base.

The surface of Silvercote consists of a mineral, homogeneous pigment polished into a silver-like sheen which reflects radiant heat and establishes exceptional insulation values. The surface possesses the following essential properties:

1. The surface is mineral and will not oxidize or corrode.
2. The surface is waterproof and cannot absorb moisture.
3. The surface is impervious to air filtration and non-conductive to electrical or thermal energy.
4. The surface is vermin proof.
5. The surface is not affected by alkalies contained in plaster or by any of the acids or gases encountered in the customary uses of thermal insulation.

This surface layer of 47-lb. bleached Kraft base is attached to a 90-lb. Kraft by a layer of asphaltum. This duplex moisture proof product is then attached to Milcor Metal Lath by staples.

WEIGHT OF MILCOR SILVERCOTE— Weight—337 lbs. per 1000 sq. ft. Bundled 10 sheets, 24x97 in., 160 sq. ft. to the bundle.

Milcor Silvercote possesses all of the required factors of an ideal reflective insulation combined with the known values of metal lath as a plastering base. The reflective type is the most efficient and scientific type of insulation. The Silvercote process of reflective insulation is the most practical and durable of this type. That combined with the unquestioned value of metal lath as a plastering base attached thereto gives Milcor Silvercote a standing in the insulation field above all others.

Plaster is easily applied to Milcor Silvercote. The mesh assures a perfect bond and the plaster is completely embedded in the lath.

MILCOR STEELKRAFT

SteelKraft is a combination of special heavy paper backing and Netmesh, Smalmesh or Furlath to which it is attached. The paper backing is a combination of waterproof paper and absorbent paper held together by a layer of asphalt. The absorbent side is next to the lath. The advantages are the same as Milcor Silvercote except for the reflective insulating feature.

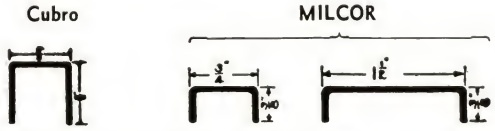
SHEET SIZE—24x96 in. Packed 9 sheets (16 sq. yds. per bundle). The paper backing is short on two sides to allow for approximately one inch lap of metal lath.

MILCOR COLD ROLLED CHANNELS

Milcor Pressed Steel Channels are cold rolled and present a level surface on all three sides. They are accurately pressed at perfect right angles, uniform and straight their entire length.

MAXIMUM PERMISSIBLE HEIGHTS (NON-BEARING PARTITIONS)

Note: Comparison of these maximum permissible heights with those of other fireproof partition materials will show the wide margin by which this construction exceeds.



¾-INCH CHANNELS—2 in. thick solid—10 ft.; 2½ in. thick solid—12 ft.
1-INCH CHANNELS—2 in. thick solid—12 ft.; 2½ in. thick solid—16 ft.
1½-INCH CHANNELS—2½ in. thick solid—22 ft.; 3 in. thick solid—24 ft.
TWO ¾-INCH CHANNELS—3 in. or more hollow—24 ft.

MILCOR
Diamond-Mesh Expanded Corner Lath
(FOR INNER CORNERS AND CEILING ANGLES)

CORNER LATH

LATH STRIP

SPECIFICATION DATA
General Characteristics

Milcor Corner Lath consists of strips of Netmesh (see page 8) ⅜-in. diamond expanded lath with finished edges—not rough or ragged. Required as reinforcing over all re-entrant angles over wood or rib metal lath where inner angle bead is not used for the same purpose.

SIZES—Corner Lath have 3 and 4-in. wing width and are 8 ft. long. Lath Strips are 3, 4 or 6 ins. wide and 8 ft. long. Packed approximately 500 lin. ft. per crate.

MATERIALS—Sheet steel, painted or galvanized; copper alloy steel; Armco Ingot Iron or Toncan Iron, painted or galvanized.

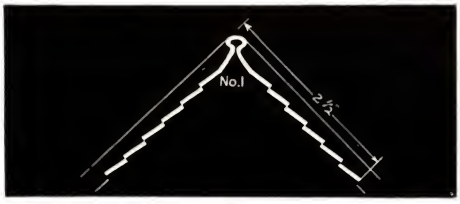
No. 1 EXPANSION (2½") 5" WING, 24-GAUGE EXPANSION CORNER BEADS

NO. 1 MILCOR EXPANSION CORNER BEAD
FOR OUTER OR EXPOSED ANGLES

Fabricated from No. 26 gauge and No. 24 gauge tight coat galvanized steel or Armco Ingot iron and Toncan iron, also pure zinc and cold rolled copper. Lengths of 6, 7, 8, 9, 10, 11 and 12 feet. Weight per 1,000 feet: No. 26 gauge, 230 lbs. crated; No. 24 gauge, 300 lbs. Packed 500 feet to the crate. Patents Nos. 1,419,232 and 1,482,600.

All Milcor Expansion Corner Bead packed in wooden crates.

Look for the lettering: "Milcor Expansion Corner Bead" which is stamped on the side of each bead. Demand the genuine. Refuse imitations.

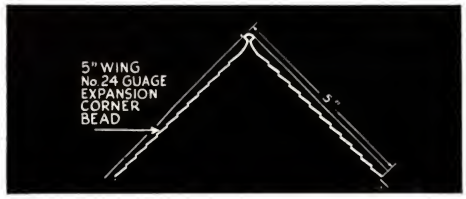


No. 1 Expansion

DESCRIPTION—The exclusive feature of Milcor Expansion Corner Beads is the use of Expanded Diamond Mesh reinforcement in the wings or webs instead of practically solid members as in other types. The wings of expanded metal permit keying the plaster right up to the bead. Every square inch of these wings reinforces the plaster. There are no smooth surfaces to which the plaster may or may not "stick." The result is effective reinforcement where it is most needed . . . and substantial assurance that the plaster corners will withstand much more than the average abuse.

Milcor Expansion Corner Bead can be wired, stapled, stuck or nailed to any kind of wall construction at lowest cost—no clips are necessary.

GENERAL CHARACTERISTICS—Narrow rounded nose. Standard wing width 2½ inches with finished edges—not rough or jagged. Obtainable (special) with one narrow wing—1, 1¼, 1½, 1¾, 2, 2¼, or 2½ inches wide. A general utility corner bead.



5-in. Wing, 24 Gauge Expansion

DESCRIPTION—Milcor 5-inch Wing, 24-gauge Expansion Corner Bead has the same advantages as No. 1 Expansion Corner Bead with the additional feature of full 5-inch wings of expanded metal.

There is economy due to saving in material and labor through the use of Milcor 5-inch Wing Expansion Bead on work where it would be necessary to use a strip of metal lath in connection with a narrow wing bead.

Columns are formed more easily . . . on beams, mullions, pilasters and corners the 5-inch wings save time and labor.

MILCOR Corner Bead Setter

The Milcor Corner Bead Setter makes precision corners certain and enables one man to set more corner bead of any type than two men can by old methods. Three spirit levels make this bead setter practical for either perpendicular or horizontal positions.

SPECIFICATION DATA
No. 1 Expansion
MATERIALS, WEIGHTS, ETC.

Note: For complete description of materials, finishes, etc., see page 2.

SHEET STEEL, GALVANIZED—26 gauge—230 lbs. per 1,000 lin. ft.; 24 gauge—300 lbs. per 1,000 lin. ft.; 6, 7, 8, 9, 10, 11 and 12 ft. long. Packed approximately 500 and 1,000 lin. ft. per crate.

ARMCO INGOT IRON OR TONCAN IRON, GALVANIZED—26 gauge—230 lbs. per 1,000 lin. ft.; 24 gauge—300 lbs. per 1,000 lin. ft.; 6, 7, 8, 9, 10, 11 and 12 ft. long. Packed approximately 500 and 1,000 lin. ft. per crate.

PURE ZINC—No. 12—290 lbs. per 1,000 lin. ft.; 8, 9, 10 and 12 ft. long. Packed approximately 500 and 1,000 lin. ft. per crate.

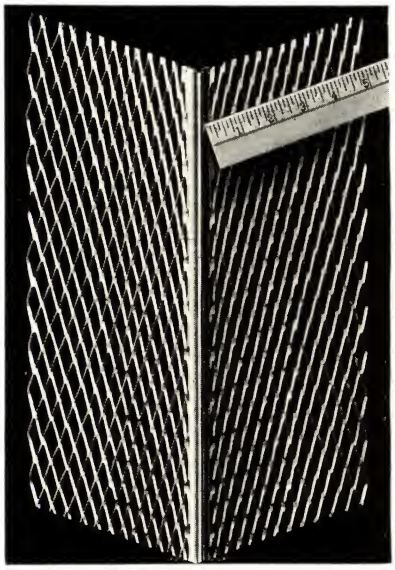
COLD ROLLED COPPER—16 oz.—230 lbs. per 1,000 lin. ft.; 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

SPECIFICATION DATA
5-in. Wing
MATERIALS, WEIGHTS, ETC.

SHEET STEEL, GALVANIZED—24 gauge—430 lbs. per 1,000 lin. ft. crated. Packed approximately 500 ft. per crate.

ARMCO INGOT IRON OR TONCAN IRON, GALVANIZED—24 gauge—430 lbs. per 1,000 lin. ft. crated. Packed approximately 500 ft. per crate.

LENGTHS—Same as No. 1 Expansion Corner Bead.



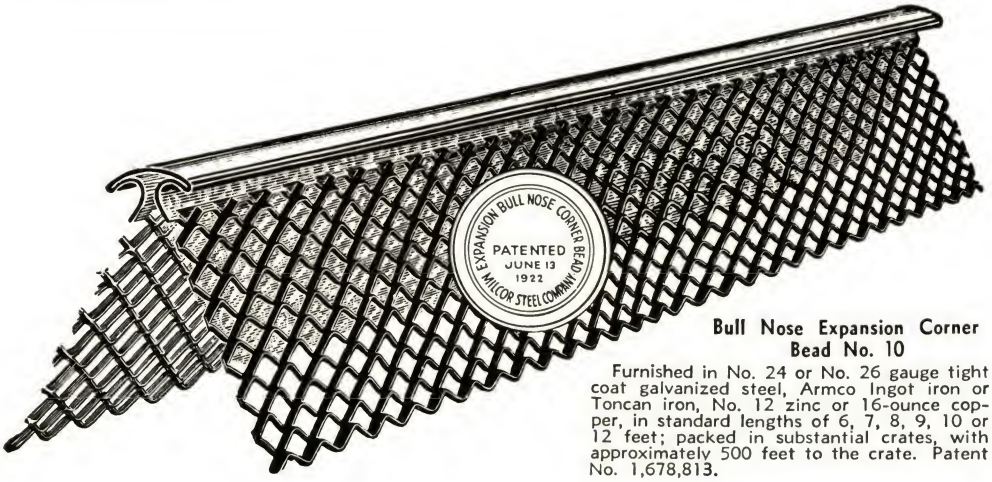
Milcor 5-in. Wing, 24 Gauge Expansion Corner Bead

Has expanded metal wings full 5 inches in width. Patent Nos. 1,419,232 and 1,482,600. Other patents pending.

No. 10 BULL NOSE EXPANSION CORNER BEAD

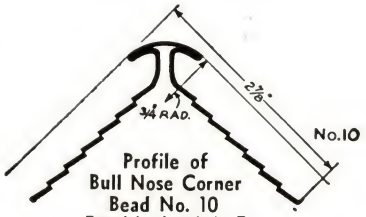
No. 11 (*Reinforced*) BULL NOSE EXPANSION CORNER BEAD

MILCOR

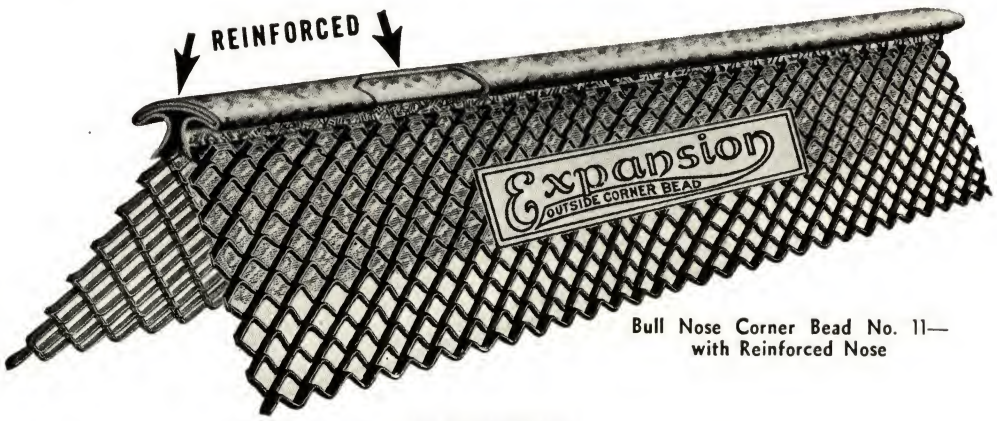


Bull Nose Expansion Corner Bead No. 10

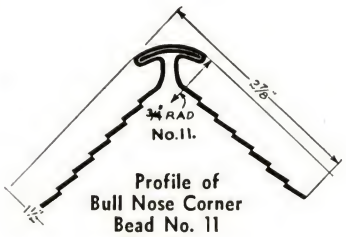
Furnished in No. 24 or No. 26 gauge tight coat galvanized steel, Armco Ingot iron or Toncan iron, No. 12 zinc or 16-ounce copper, in standard lengths of 6, 7, 8, 9, 10 or 12 feet; packed in substantial crates, with approximately 500 feet to the crate. Patent No. 1,678,813.



Profile of Bull Nose Corner Bead No. 10
Furnished with 5-inch wing if desired.



Bull Nose Corner Bead No. 11— with Reinforced Nose



Profile of Bull Nose Corner Bead No. 11 Showing Reinforcement

DESCRIPTION

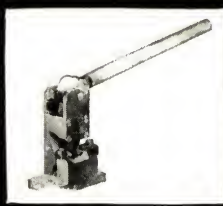
GENERAL CHARACTERISTICS—No. 10 Bull Nose Expansion Corner Bead is ideal where broad, heavy, curved corners are desired for sanitary conditions, for pleasing appearance, and for supreme protection of plastered walls against heavy furniture, carts, wheel chairs and other objects which are moved frequently.

The Bull Nose Bead has the same advantages as the narrow nose, regular Expansion Corner Bead No. 1.

One-inch nose (¾-inch radius). Standard wing width 2¾ inches with finished edges—not rough or ragged. Specially adapted for hospitals, hotels, schools, institutions and office buildings. Specify joints at miters cut with Milcor Coping Machine.

No. 11 Bull Nose Expansion Corner Bead is furnished with reinforced nose as shown in illustration above. This extra strength is desirable when particularly hard usage is anticipated. Reinforcing strip can be 26, 24 or 20 gauge sheet steel.

All Milcor Corner Beads are neatly and securely packed in heavy wooden crates. This ultra-safe packing precludes any possibility of damage in transit or on the job. The beads come to you precisely straight and true.



COPING MACHINE

A special portable Coping Machine, which can be set up anywhere on the job, is used to cut the broad Bull Nose for precise, tightly fitting corners.

SPECIFICATION DATA

MATERIALS AND WEIGHTS—Note: For complete description of materials, finishes, etc., see page 2.

SHEET STEEL GALVANIZED—26 gauge—375 lbs. per 1,000 lin. ft., crated; 24 gauge—470 lbs. per 1,000 lin. ft., crated. 6, 7, 8, 9, 10, and 12 ft. long. Packed approximately 500 lin. ft. per crate.

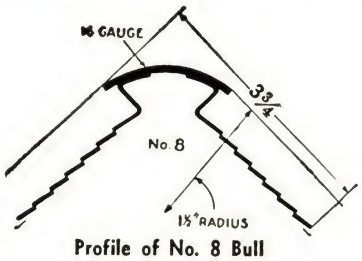
ARMCO INGOT IRON OR TONCAN IRON, GALVANIZED—26 gauge—375 lbs. per 1,000 lin. ft., crated; 24 gauge—470 lbs. per 1,000 lin. ft., crated. 6, 7, 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

COLD ROLLED COPPER—16 oz.—470 lbs. per 1,000 lin. ft., crated. 6, 7, 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

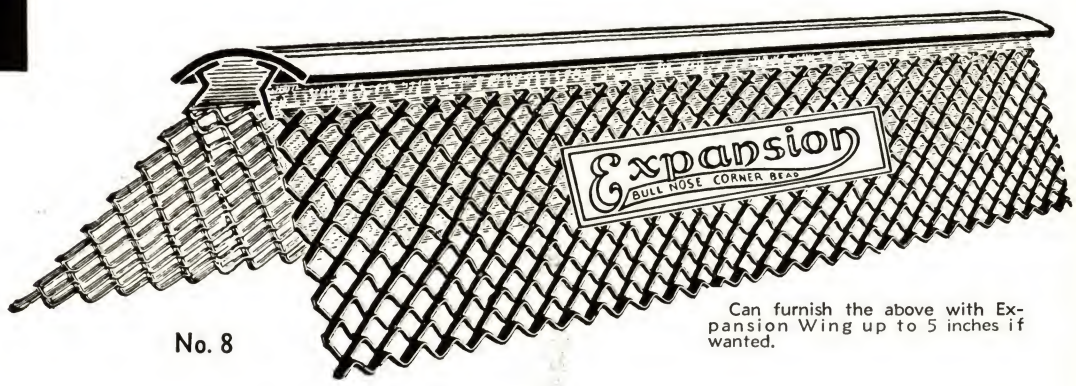
Note: Weights of No. 11 are heavier according to gauge of reinforcing strip used.

NOS. 8 AND 9 BULL NOSE CORNER BEADS

WITH EXPANDED METAL WINGS

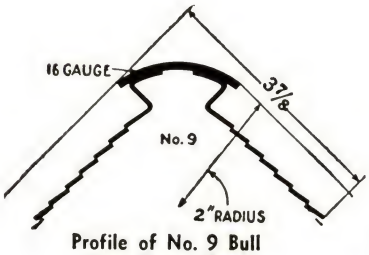


Profile of No. 8 Bull Nose Corner Bead

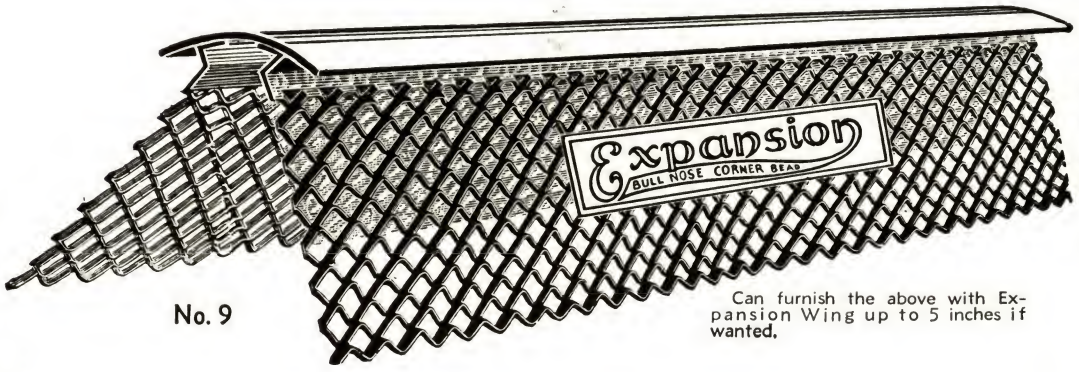


No. 8

Can furnish the above with Expansion Wing up to 5 inches if wanted.

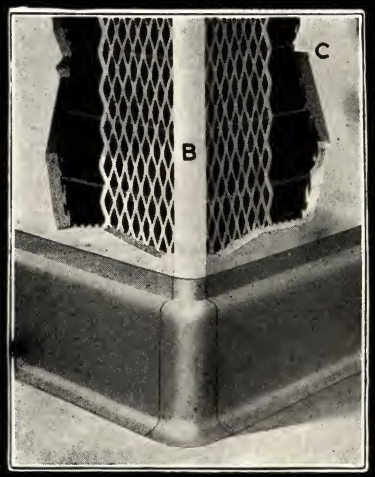


Profile of No. 9 Bull Nose Corner Bead



No. 9

Can furnish the above with Expansion Wing up to 5 inches if wanted.



CORNER SHOWING BULL NOSE CORNER BEAD No. 8 IN POSITION IN PLASTERED WALL

With portion of base exposed to show: "B" — the exposed solid bull nose of the bead and its expanded metal; and "C" — Stay-Rib Metal Lath No. 1.

DESCRIPTION

GENERAL CHARACTERISTICS—No. 8 Bull Nose Corner Bead with expanded metal wings is for use where extra broad, heavy, curved corners are desired. The 16-gauge nose of the Bead has a face 2⅛ in. in width, curved to a 1½-in. radius. 24-gauge Expanded Metal Wings of standard 2¾ in. width are spotwelded to the broad nose of the bead in such manner as to reinforce the heavy face of the bead. This construction gives the No. 8 Bull Nose the same advantages as the regular Milcor Expansion Corner Bead in addition to the broad nose feature.

No. 9 Bull Nose Corner Bead is similar to No. 8 except that it has a face 2¼ in. wide, curved to a 2-in. radius.

SPECIFICATION DATA

MATERIALS AND WEIGHTS—Note: For complete description of materials, finishes, etc., see page 2.

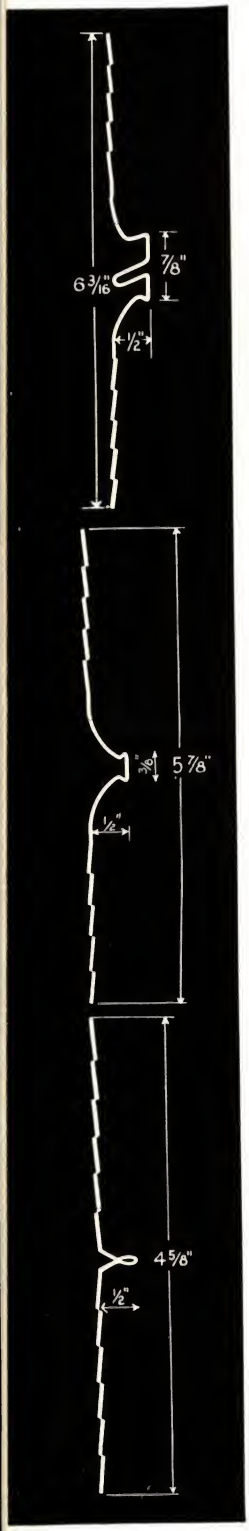
SHEET STEEL — Tight-coat, galvanized, 16-gauge nose and 24-gauge expanded metal wing. No. 8—550 lbs. per 1,000 lin. ft., crated. No. 9—900 lbs. per 1,000 lin. ft., crated; 6, 7, 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

ARMCO INGOT IRON OR TONCAN IRON, GALVANIZED—No. 8—550 lbs. per 1,000 lin. ft., crated. No. 9—900 lbs. per 1,000 lin. ft., crated; 6, 7, 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

PICTURE MOULD AND BASE SCREEDS WITH EXPANSION WINGS

Patents Nos. 1 419,232 and 1,482,600

MILCOR



NO. 17 EXPANSION PICTURE MOULD

SPECIFICATION DATA

GENERAL CHARACTERISTICS—Milcor Picture Mould with Expansion Wings—No. 17 has a wide metal surface flush with the plaster line. It is permanent, sturdy and sanitary, forming a rigid, dependable support for the heaviest decorations. The Expansion Wing forms a strong plaster reinforcement both above and below the moulding.

MATERIALS, WEIGHTS, ETC.—SHEET STEEL, GALVANIZED; ARMCO INGOT IRON OR TONCAN IRON—26-GAUGE, GALVANIZED—400 lbs. per 1,000 lin. ft., 10 ft. long, crated. Packed approximately 500 lin. ft. per crate.

Note: For complete description of materials, finishes, etc., see page 2.

NO. 18 FLUSH BASE SCREED WITH EXPANSION WINGS

SPECIFICATION DATA

GENERAL CHARACTERISTICS—This is a new type Flush Base Screed with Patented Expansion Wings. It is characterized chiefly by the wide flat nose which forms a dividing strip between plaster and flush cement base. Expansion Wings reinforce both plaster and cement and guard against cracks.

MATERIALS, WEIGHTS, ETC.—SHEET STEEL, GALVANIZED; ARMCO INGOT IRON OR TONCAN IRON—26-GAUGE, GALVANIZED—300 lbs. per 1,000 lin. ft., 10 ft. long, crated. Packed approximately 500 lin. ft. per crate.

Note: For complete description of materials, finishes, etc., see page 2.

NO. 3 EXPANSION BASE SCREED

SPECIFICATION DATA

GENERAL CHARACTERISTICS—A firm, rigid metal dividing strip set between plaster and flush cement base with the advantages of 2¾-inch wings of strong mesh lath reinforcement against any possibility of cracks at juncture.

MATERIALS, WEIGHTS, ETC.—SHEET STEEL, GALVANIZED; ARMCO INGOT IRON OR TONCAN IRON—26-GAUGE, GALVANIZED—230 lbs. per 1,000 lin. ft., 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate. Also furnished in zinc and copper.

Note: For complete description of materials, finishes, etc., see page 2.

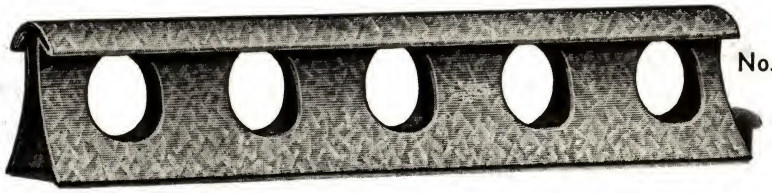
OLD STYLE METAL CORNER BEADS

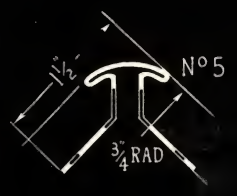
NO. 5 BULL NOSE CORNER BEAD

MATERIAL — No. 26 and No. 24 gauge sheet steel.

LENGTHS—5, 6, 7, 8, 9, 10 and 12 feet.

APPROXIMATE WEIGHTS — No. 26 gauge — 290 lbs. per 1,000 ft., crated; No. 24 gauge — 410 lbs. per 1,000 ft., crated. Packed 500 lin. ft. per crate.



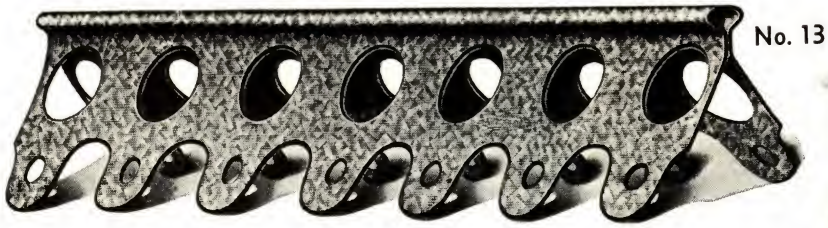


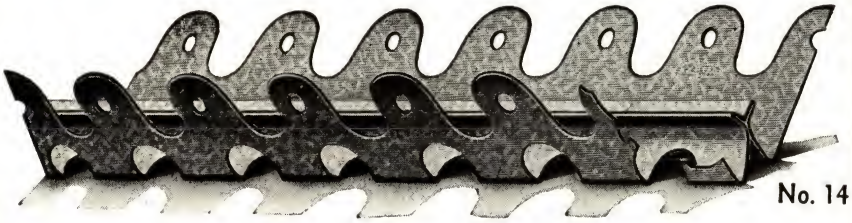
NOS. 13 AND 14 "SUPERIOR" CORNER AND INNER ANGLE BEADS

MATERIAL — No. 26 gauge sheet steel, galvanized.

LENGTHS—6, 7, 8, 9, 10 and 12 ft.

APPROXIMATE WEIGHT—220 lbs. per 1,000 ft., crated. Packed ten pieces of uniform length to the bundle; 500 ft. per crate.



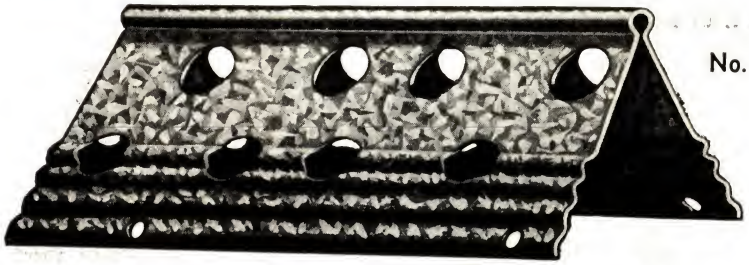


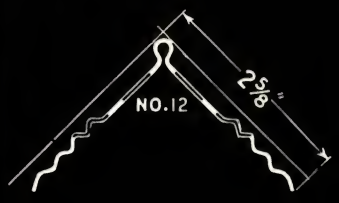
NO. 12 EXTRA WIDE FLANGE CORNER BEAD AND NO. 19 WIDE FLANGE SCALLOPED EDGE CORNER BEAD

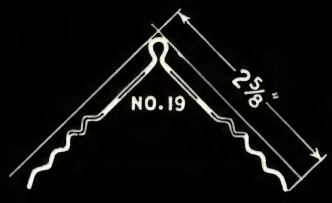
MATERIAL—No. 26 or No. 24 gauge sheet steel, galvanized.

LENGTHS—6, 7, 8, 9, 10 and 12 ft.

APPROXIMATE WEIGHT—No. 26 gauge —370 lbs. per 1,000 ft.; No. 24 gauge—500 lbs. per 1,000 ft. Packed 500 ft. per crate.







GENERAL CHARACTERISTICS—For the less important work where cost is a prime factor and corner beads with the Milcor Patented Expansion Wings are not warranted, the Milcor Steel Company continues to manufacture a complete line of Old-Style Metal Corner Beads comparable in both material and design to the best of this style sold competitively.

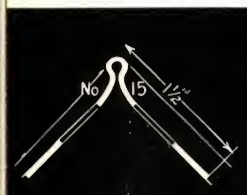
Note: For complete description of materials, finishes, etc., see page 2.

NOTE. For complete description of materials, finishes, etc., see page 2.

OLD STYLE METAL CORNER BEADS, SCREEDS, ETC.

(FOR CORNER BEADS WITH EXPANSION WINGS, SEE PAGES 11 to 13)

MILCOR



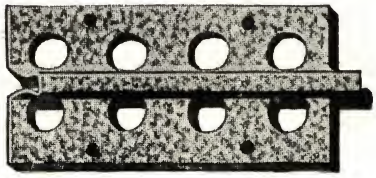
No. 15 "Milcor" Corner Bead

NO. 15 "MILCOR" CORNER BEAD (Diamond)

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTHS—6, 7, 8, 9, 10 and 12 ft.

APPROXIMATE WEIGHT — 185 lbs. per 1,000 ft., crated. Packed 500 ft. per crate.



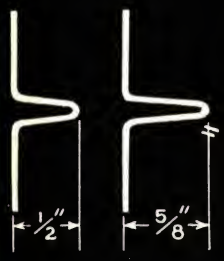
No. 61 Wide Nose Base Screed

NO. 61 WIDE NOSE BASE SCREED

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTH—9 ft.

APPROXIMATE WEIGHT — 195 lbs. per 1,000 ft., crated.



No. 77 Plain Base Screed

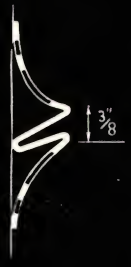
NO. 77 PLAIN BASE SCREED—½-inch and ¾-inch Grounds (⅝-inch Furnished if Desired)

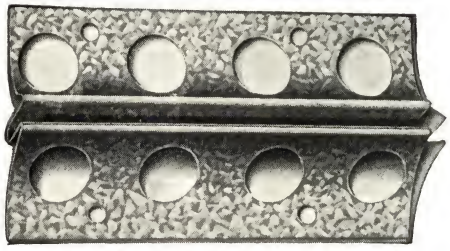
MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTH—10 ft.

APPROXIMATE WEIGHT — 175 lbs. per 1,000 ft., crated. Packed 1,000 ft. per crate.

Hump Corner Bead Clip (Black Steel)





No. 23 Concealed Picture Moulding

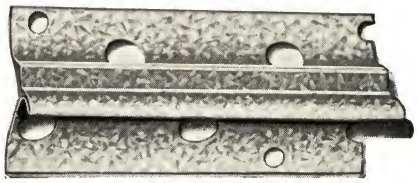
NO. 23 CONCEALED PICTURE MOULD

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTH—10 ft.

APPROXIMATE WEIGHT — 220 lbs. per 1,000 ft., crated. Packed 1,000 ft. per crate.

Universal Corner Bead Clip (Galvanized)



No. 74 Curved Point Base Screed

NO. 74 CURVED POINT BASE SCREED

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTH—10 ft.

APPROXIMATE WEIGHT — 195 lbs. per 1,000 ft., crated. Packed 1,000 ft. per crate.

THE MILCOR SOLID PARTITION AND FURRING SYSTEM . . .

SIMPLIFIES ERECTION AND LOWERS CONSTRUCTION COSTS

STEEL MEMBERS IN MILCOR SYSTEM ERECTED IN THREE SIMPLE OPERATIONS

CEILING ANGLE RUNNERS are attached to the ceiling with bolts, nails, or rawl drives. A burr on the holes in the CEILING RUNNER holds the Specially Slotted Channel in position.

SPECIALLY SLOTTED CHANNEL STUDS used in Milcor Solid Partitions are notched and slotted as illustrated. The slotted end is slipped on to the Ceiling Angle Runner and the other end is dropped into the Crimped Floor Runner.

CONTINUOUS CRIMPED RUNNERS are attached to the floor with nails, bolts or rawl drives directly beneath the Ceiling Angle Runner.

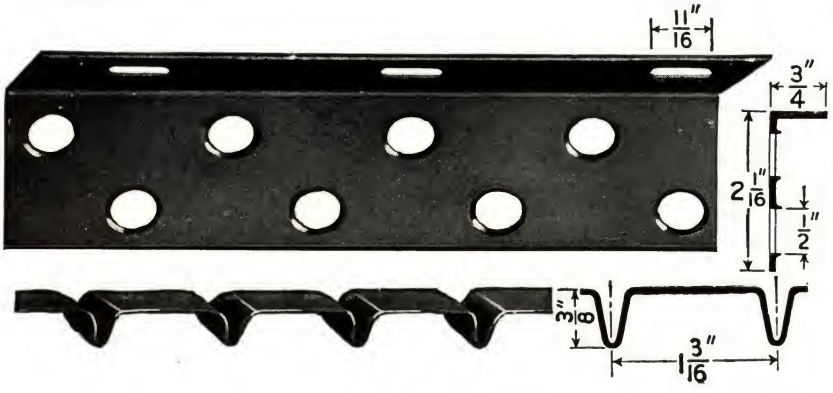
It is not necessary to wire Channels to either ceiling or floor runners before the lath is applied. Such wiring can be done if desired when lath is wired on channels.

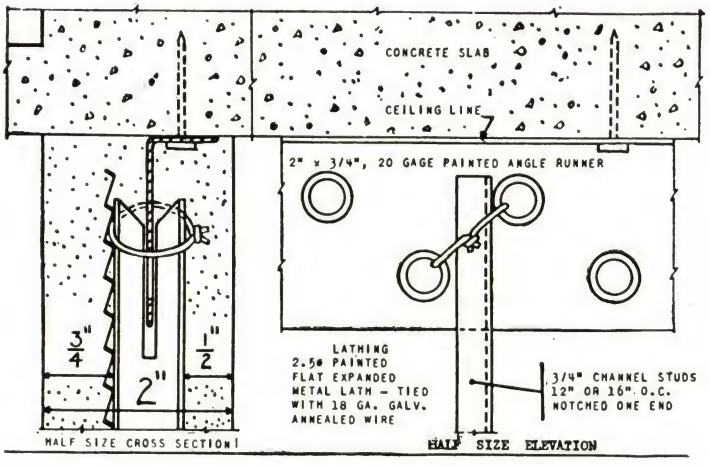
THE MILCOR SYSTEM FOR 2-INCH SOLID PARTITIONS

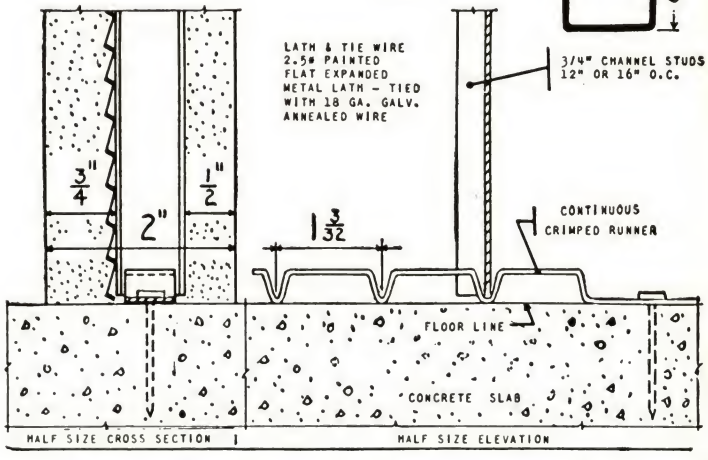
(Patents Pending)

Three units provide the steel to hold metal lath in the Milcor Solid Partition System. They are the Ceiling Angle Runner, Specially Slotted Channel Stud, and Continuous Crimped Floor Runner. This method offers a distinct saving in time and cost.

The same units as used for Solid Partitions may be employed in erecting free-standing Furring walls. This wall may be placed at any desired distance from the outside wall and does not have any contact with it.







MILCOR COVE LATH

Patent No. 1,975,242

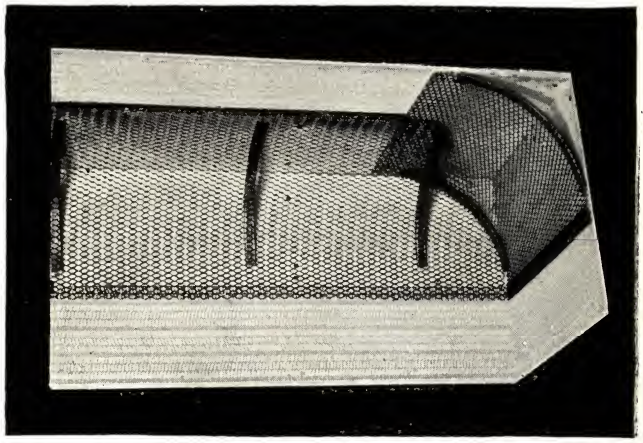
MAKES PERFECT COVES . . . SAVES FUSSY WORK

DESCRIPTION—Milcor Cove Lath is made from 3.4 lb. Diamond Mesh Lath electrically welded to curved channel sections spaced 16 inches on center. Its use saves the time ordinarily consumed in cutting wood brackets and provides a steel plaster base to join wall and ceiling—the greatest insurance against plaster cracks. The Cove is made with radii of 6¾, 8¾ and 10¾ inches for a finished plaster surface of 6, 8, and 10 inches.

SPECIFICATION DATA. Dimensions: Furnished in sheets 8 feet long with 6¾, 8¾, and 10¾ inches actual radii.

Packing: Furnished either bundled or crated, packed 20 pieces or 160 feet per bundle or crate.

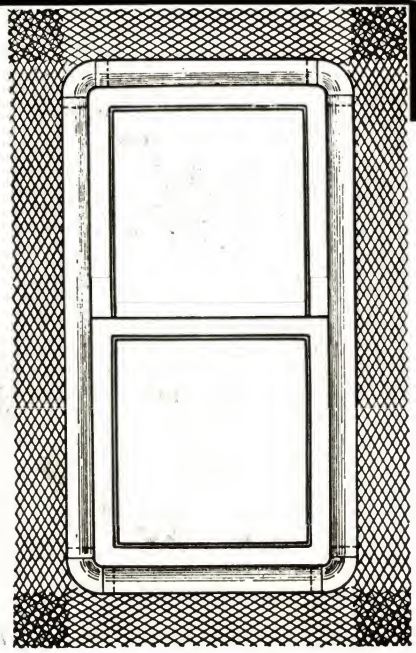
Weights per 1000 feet: 6¾ radius, 450 lbs.; 8¾ radius, 600 lbs.; 10¾ radius, 725 lbs.



Milcor Cove Lath is exceptionally simple to miter. One section of the lath can butt up against the wall on inside corners and it is therefore only necessary to cut the other piece at an angle.

METAL WINDOW TRIM AND STOOLS

Above photograph shows application before plastering of Milcor Window Stool No. 520 used in conjunction with Window Trim No. 500 which forms jambs and head. Note particularly the function of the Expanded Metal Flange which is seamed or welded on the Stool and Trim and will eliminate any possibility of cleavage cracks at joining of plaster and trim. On the opposite page is a similar installation after the interior has been completed.



Sketch above shows No. 500 Window Stool and Fittings used as complete window Trim, with Expanded Metal Flange reinforcement on all sides.

SPECIAL

1. Milcor Metal Window Trim and Stools provide best possible construction for practically all kinds of buildings. Permanence, fire safety, and resistance to use and abuse are inherent advantages in these products because they are made entirely of heavy metal.

2. They are sanitary and economical, easy to keep clean and to maintain.

3. All types are attractive in appearance and adaptable to any installation, being particularly suited to use in public buildings, schools, hospitals, institutions, hotels, apartments, offices and industrial buildings.

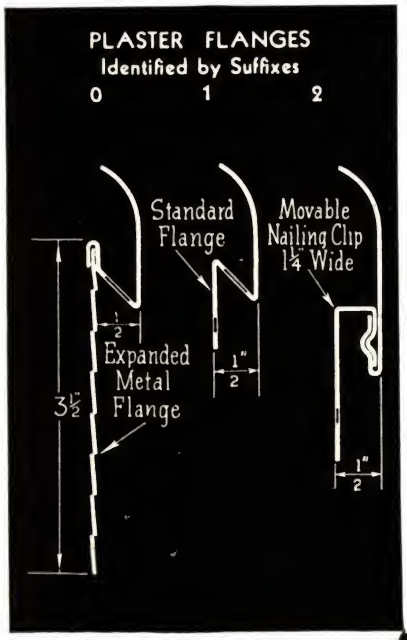
MILCOR TRIM

AVAILABLE WITH ANY OF THREE FLANGES

Most Milcor Metal Trim Products are available with any of three different types of Metal Flanges for fastening the trim to the wall.

EXPANSION WING FEATURE—Obviously the most practical of these is the Expanded Metal Flange, which in many cases is formed as an integral part spot-welded to the exposed moulding. The advantage of this expansion flange lies principally in its function as a permanent plaster bond whose network of expanded steel prevents checking and cracking of plaster at the vulnerable points.

Cross section views of the Expanded Metal Flange, Standard Flange, and movable Nailing Clip are shown in sketch at right. Any of these flanges are available on all Milcor Window Stools and flange desired should be clearly specified.



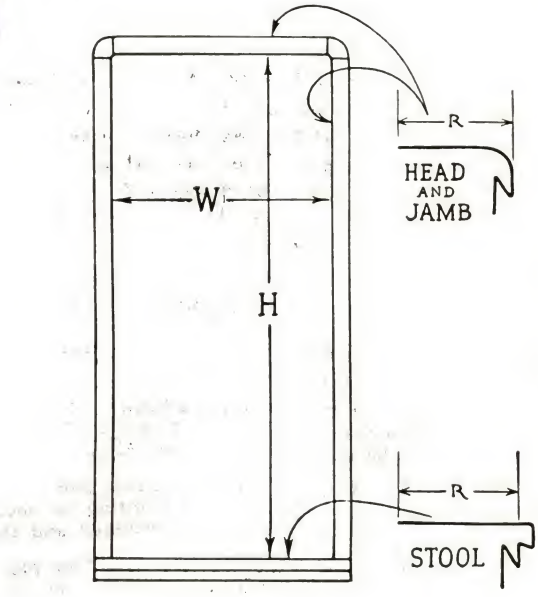
METAL WINDOW TRIM AND STOOLS

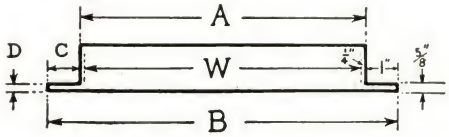
FEATURES

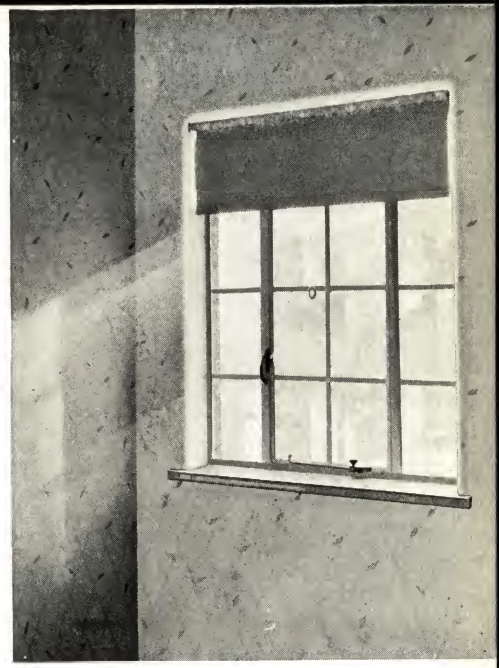
4. The line is COMPLETE Every desirable type of metal window trim and stool may be found in the Milcor line and numerous different installations may be achieved by combining various designs, mouldings and bases.

5. Most Milcor Trim is available with any of three types of plaster flanges: 1. Expansion Wing; 2. Standard Flange; and 3. Movable Clip.

6. Cast iron fittings are WELDED to the stools and trim at the factory, an important, exclusive feature which makes these products unequalled in strength, appearance and ease of installation.



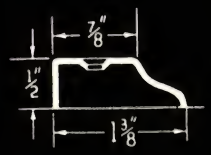




The simple architectural beauty which can be achieved through the use of Milcor Metal Trim is readily evident in the above photograph. It is so obviously more attractive than the old heavy wood trim that comparison is unnecessary. But even more important than its good looks are the many practical advantages which make it the ideal trim for every structure.

No. 703 Window Stop

Window Stop No. 703 may be used on all Milcor and Richsto Window Stools. See dimensions in sketch.



INSTRUCTION CHART
FOR ORDERING WINDOW TRIM

Window Stools and Trim are generally cut to the exact length desired and the proper end fittings permanently welded at the factory. Therefore, it is necessary that we be supplied with dimensions as shown in accompanying chart.

MEASUREMENTS REQUIRED FOR FLAT FACED STYLE WINDOW TRIM AND STOOL

W—Represents the width of opening between finished plastered jambs.

A—Equals width including ¼ in. allowance on each end of stool for projection into the finished plaster. This prevents any possibility of an exposed crack.

B—Represents overall exposed surface including 1 ¼ in. projection on each end of stool beyond window openings.

C—Represents standard notch. This may be varied depending on distance of projection required. Standard notching furnished unless otherwise specified.

D—Represents ½ in. width of extension beyond face of finished plaster line. Additional ¼ in. furnished for inserting in plaster.

H—Represents height of window opening from face of stool to finished plaster head.

R—Represents the reveal to plaster line. This reveal must be measured from window sash to finished plaster line. ½ in. allowed for projection beyond finished plaster line.

WINDOW TRIM AND STOOLS
No. 500 SERIES

MILCOR

MILCOR

No. 500 WINDOW STOOL
1½" Radius with 500-H Fitting

MILCOR No. 500 Series Trim and Stools provide suitable construction for modern public buildings, schools, hospitals, institutions, hotels, apartments, offices and industrial buildings. The natural qualities of the metal surface provide sanitation, fire safety and attractive appearance while the Expansion Wing offers permanent protection against cracks and cleavage.

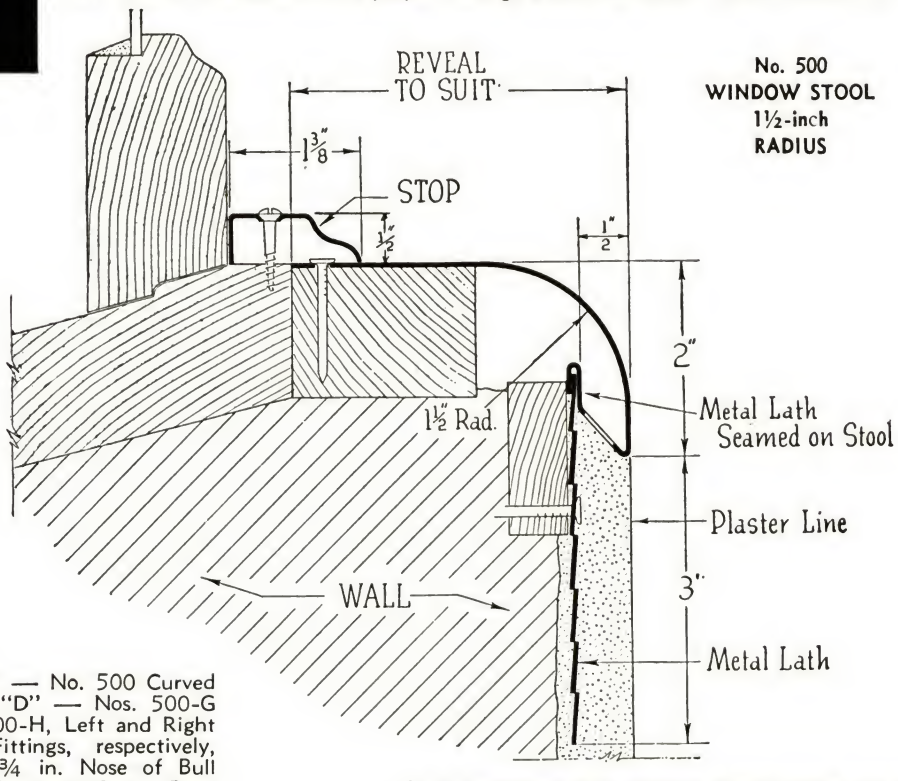
RECOMMENDED SPECIFICATION DATA

1 — IDENTIFICATION OF STOOL — Stools should be selected and specified by numbers given herein.

2 — KIND OF METAL AND GAUGE — Milcor Window Stools and Trim are made fom Tight Coat Galvanized Sheets of 20, 18, 16, 14 and 12 gauge metal. Can be made from Armco or Copper Alloy.

3 — FINISH — Milcor Window Stools and Trim are given a priming coat at the factory and take any type of painting or decorating finish. Finishing coat should be put on after the trim is installed and the plastering is completed.

4 — FITTINGS — Fittings for Window Trim No. 500 Series are shown on page 21. Careful selection of the proper Fittings should be made. Milcor Corner Fit-



No. 500
WINDOW STOOL
1½-inch
RADIUS

FITTINGS FOR NOS. 500, 501, 502 WINDOW TRIM AND STOOL (See page 21, opposite)

No. 500-A All round Corner for ¾ in. Stool with ¾ in. radius Trim.

No. 500-B All round Corner for 1½ in. Stool with 1½ in. radius Trim.

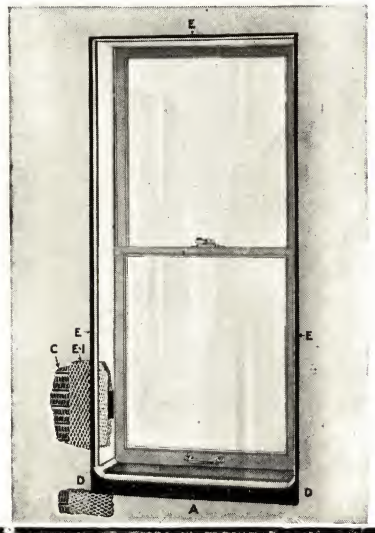
No. 500-C Left Corner for 1½ in. Stool with ¾ in. radius Trim.

No. 500-D Right Corner for 1½ in. Stool with ¾ in. radius Trim.

No. 500-E Left Corner for ¾ in. Stool with ¾ in. Bull Nose Bead.

No. 500-F Right Corner for ¾ in. Stool with ¾ in. Bull Nose Bead.

No. 500-G Left Corner for 1½ in. Stool with ¾ in. Bull Nose Bead.



"A" — No. 500 Curved Stool, "D" — Nos. 500-G and 500-H, Left and Right End Fittings, respectively, "E"—¾ in. Nose of Bull Nose Expansion Corner Bead No. 10, "E-1"—Expanded Metal Wings of Bead; "C" Kuehn's Specialmesh Metal Lath in wall.

It is important that explicit specifications be given regarding gauges of metal to be used. As a general rule we recommend 18 gauge metal for stools where the reveal is not wider than 4 in. and the stool is 5 ft. or less. With a greater reveal than 4 in. or where the stool is

No. 500 WITH EXPANDED METAL FLANGE
No. 501 WITH STANDARD FLANGE
No. 502 WITH MOVABLE NAILING CLIP

Curved Metal Window Trim No. 500 Series is made in two types — one with a ¾-inch radius and one with a 1 ½-inch radius. Cross section diagrams of each of these series (shown below) are made to ½-inch scale.

This Window Trim may be used as a Window Stool in connection with other Milcor Products or as complete trim for the window.

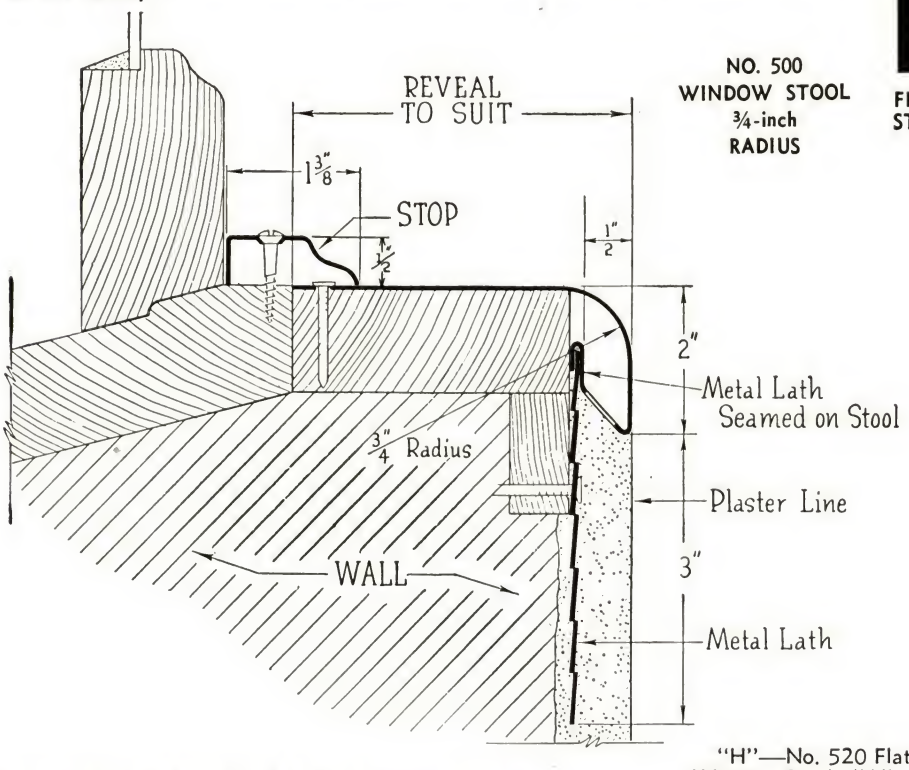
FOR ALL WINDOW TRIM AND STOOLS

tings are made from the best grades of gray cast iron, sand blasted and machined.

Corner Fittings are welded to the Trim at the factory if dimensions of windows are given when order is placed. It is sometimes desirable to ship the windows completely knocked down to be assembled on the job.

5 — GROUTING — Grouting is recommended for all Milcor Window Stools. Specifications should call for a thick grout upon which the stools are to be set.

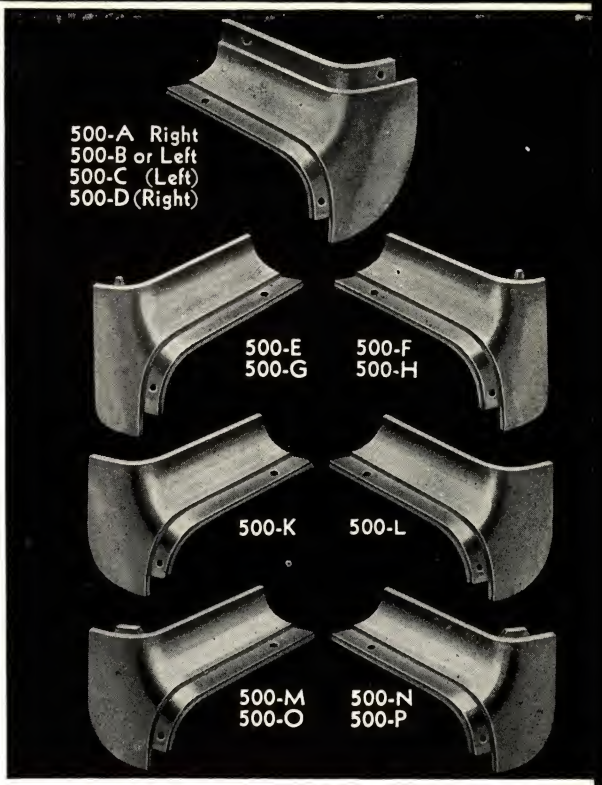
Exact dimensions should be supplied the manufacturers wherever possible, so that most of the work in preparing the Trim for installation may be taken care of at the factory.



NO. 500
WINDOW STOOL
¾-inch
RADIUS

longer than 5 ft. metals of 16, 14 or 12 gauge should be specified. In public and commercial buildings it is best not to use a lighter metal than 16 gauge for stools. These stools are cut to the required length, necessary Fittings are attached, crated and shipped ready to be set in place.

"H"—No. 520 Flat Metal Window Stool; "A" — No. 500 Curved Stool used as trim; "B"—No. 500-A and B Corner Fittings; "C"—Expansion Wing attached to No. 500 Window Trim.



FITTINGS FOR NOS. 500, 501, 502 WINDOW TRIM AND STOOL (See page 20, opposite, for Nos. 500-A to 500-G, inc.)

No. 500-H Right Corner for 1 ½-inch Stool with ¾-inch Bull Nose Bead.

No. 500-K Left Corner for 1 ½-inch Stool with 1 ½-inch Bull Nose Bead.

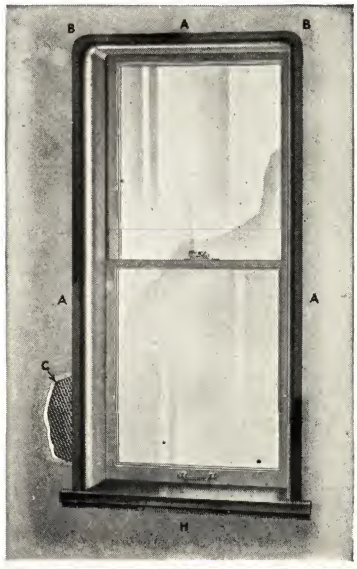
No. 500-L Right Corner for 1 ½-inch Stool with 1 ½-inch Bull Nose Bead.

No. 500-M Left Corner for ¾-inch Stool with ¾-inch Plaster Jamb.

No. 500-N Right Corner for ¾-inch Stool with ¾-inch Plaster Jamb.

No. 500-O Left Corner for 1 ½-inch Stool with 1 ½-inch Plaster Jamb.

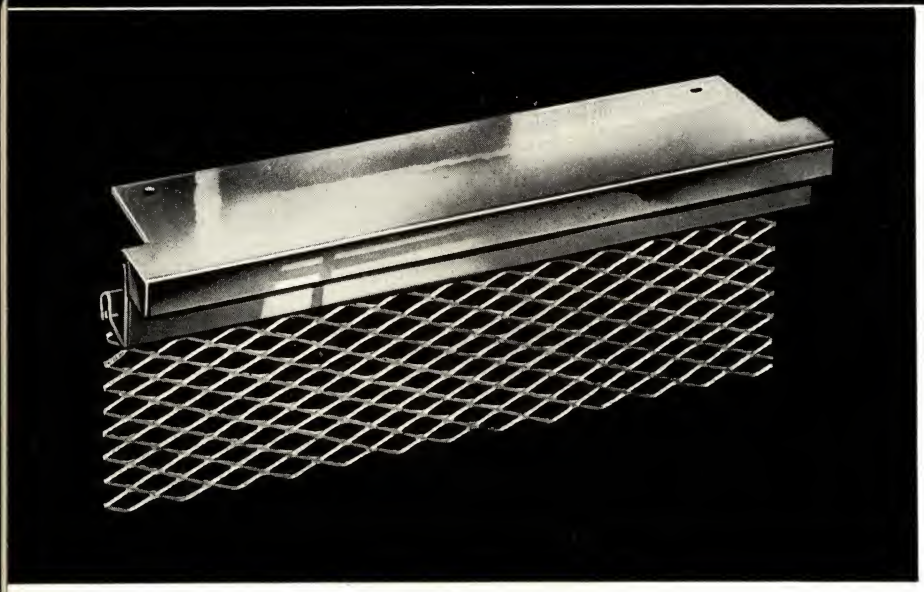
No. 500-P Right Corner for 1 ½-inch Stool with 1 ½-inch Plaster Jamb.



No. 520 SERIES WINDOW STOOLS

No. 520 — WITH EXPANDED METAL FLANGE
No. 521 — WITH STANDARD FLANGE
No. 522 — WITH MOVABLE NAILING CLIP

MILCOR



Very often a flat Metal Window Stool is desired and the No. 520 made by Milcor, as shown here, will solve the problem admirably.

Closures for the ends (as shown below) are furnished without extra charge. Cement grouting is recommended for good construction, particularly with the Flat Metal Window Stool.

This stool has all the natural advantages of steel construction. It is pleasingly conservative in appearance and is suitable for residential use in place of wood stools.

No special Fittings are required to connect the jambs with this stool as the jambs rest on the flat surface of the stool. Milcor Bull Nose Expansion Wing Bead No. 10, or No. 1 mitered to fit, make the most desirable jamb. This Window Stool may be pleasingly applied with Metal Window Trim No. 500 Series as described on Page 20.

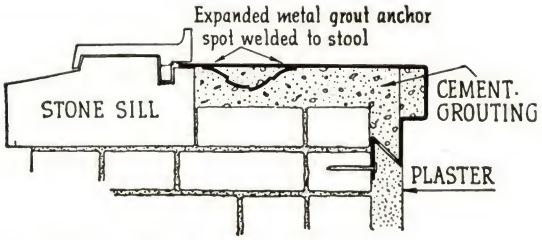


Diagram which shows expanded metal grout anchors spot welded to stool. (Furnished at slight additional cost.)

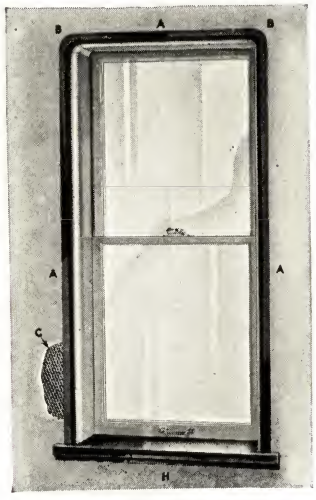


Illustration shows No. 520 Flat Metal Window Stool used with No. 500 Trim (see page 20) "A"—No. 500 Curved Stool used as trim; "B"—No. 500-A and B Corner Fittings; "H"—No. 520 Flat Metal Window Stool; "C"—Expansion Wing attached to No. 500 Window Trim.

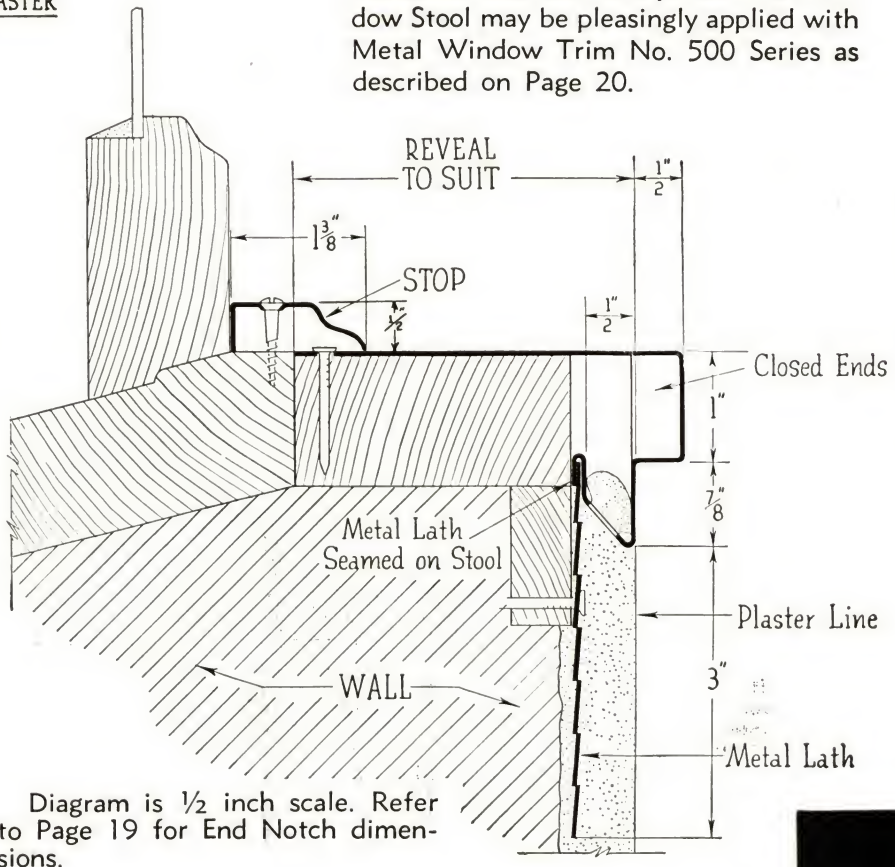


Diagram is ½ inch scale. Refer to Page 19 for End Notch dimensions.

MILCOR METAL BASES

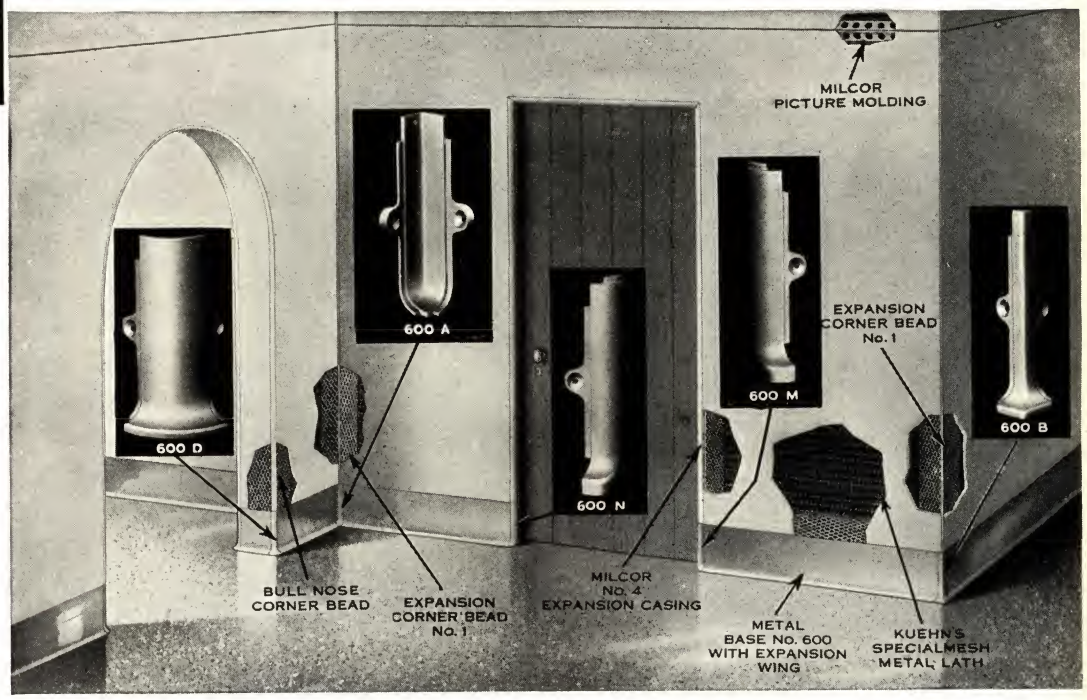
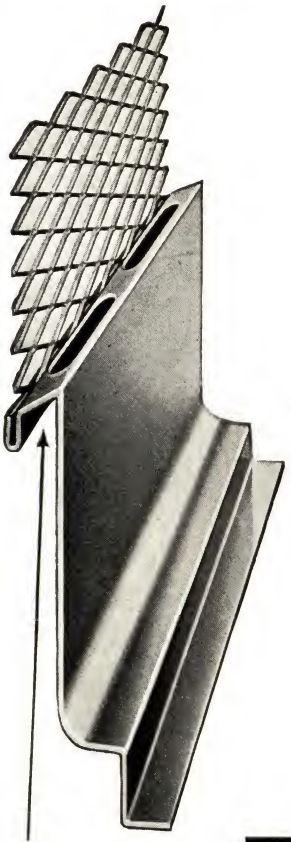
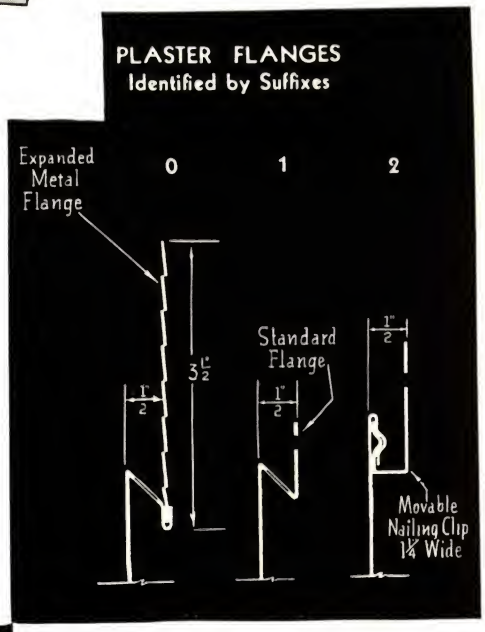


Illustration shows typical installation of Milcor Fireproof Materials with particular reference to the use of Milcor Metal Base. Corner and End Fittings perfectly match the contour of Milcor Expansion Corner Bead, No. 1; Bull Nose Corner Bead, and Casing. Complete Fittings for No. 600 Metal Base illustrated above are given on page 24.



NOTE PERFORATIONS TO PERMIT ENTRY OF FILL

MILCOR METAL BASES AVAILABLE WITH ANY OF THREE PLASTER FLANGES



GENERAL SPECIFICATION DATA FOR ALL BASES

1—PLAN SHOWING LOCATION—A plan showing just where metal bases are to be used is recommended.

2—IDENTIFICATION OF BASE—Base should be selected and specified by numbers as given in this catalog.

3—KIND OF METAL AND GAUGE—Milcor Bases are made from Tight Coat Galvanized Sheets of 18 and 20 gauge metal.

4—FINISH—Milcor Bases are given a priming coat at the factory and take any type of painting or decorating finish. Finish coat should be put on after base is in place and the plastering is completed.

5—FITTINGS—Milcor Corner Fittings for right angles both inside or outside, as well as terminating points of base part, are furnished as illustrated in this catalog. Special angles should be taken care of by mitering or coping. Special fittings for odd usages or unusual corners may be furnished if a sufficient number is required to justify patterns. As a rule, however, special angle corners on any job may be made by a skilled workman when the base is being installed.

6—GROUTING—Grouting is recommended for all Milcor Flush-with-Plaster type Bases. Specifications should call for a thick grout to be poured in through the slots after the base is placed.

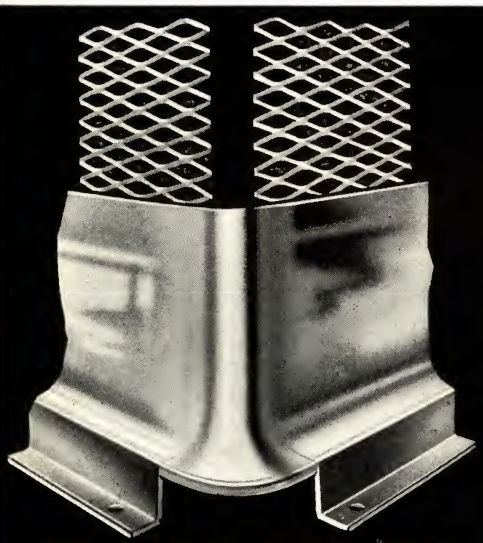
7—INSTALLATION—The base should be installed with the use of special tools rented from the manufacturer, for punching and sawing.

No. 600 SERIES METAL BASES

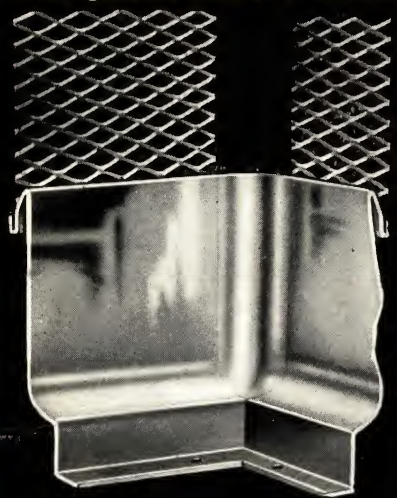
No. 600 — WITH EXPANDED METAL FLANGE
No. 601 — WITH STANDARD FLANGE
No. 602 — WITH MOVABLE NAILING CLIP

MILCOR

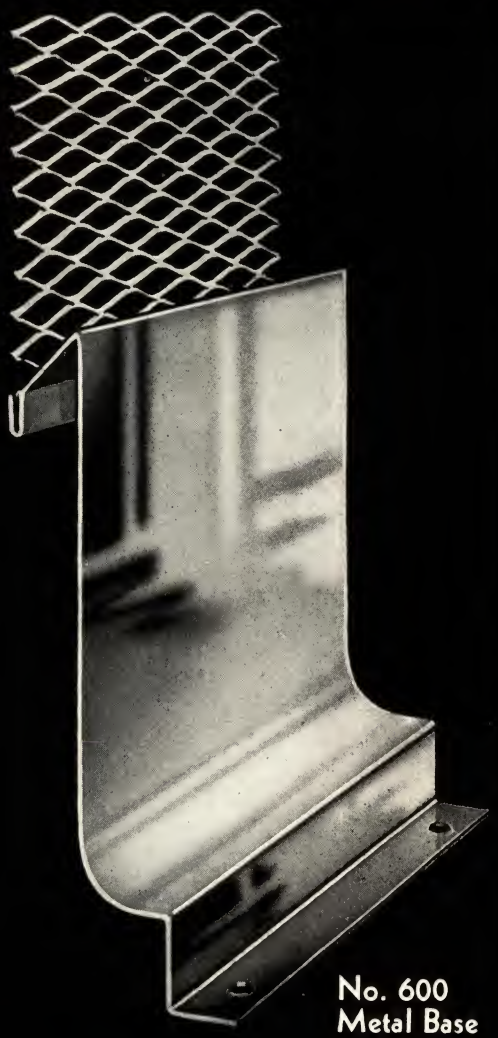
SEE PAGE 23 FOR EXPLANATION OF FLANGES



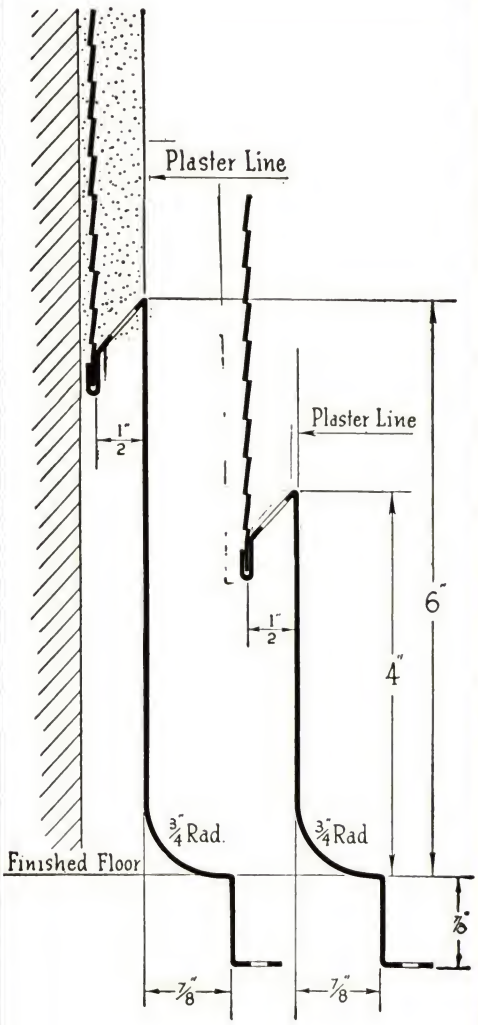
With Outside Corner No. 600-D



With Inside Corner No. 600-C



No. 600 Metal Base



NO. 600 METAL BASE, WITH EXPANDED METAL FLANGE (ILLUSTRATED)

Illustrations of No. 600 Metal Base show the Expanded Metal Flange as it is attached to the base. This flush-with-plaster type base is practical for the majority of installations.

Milcor Metal Bases with Expanded Metal Flange provide a permanent bond which eliminates any possibility of cleavage cracks at the joining of plaster and base. In addition to its grip on the plaster, the Expanded Metal Flange is attached firmly to the wall and assures positive plaster reinforcement and the greatest known assurance against plaster cracks.

The No. 600 Series, like all Milcor Bases, is furnished in 4-inch and 6-inch heights.

See general specification data on page 23.

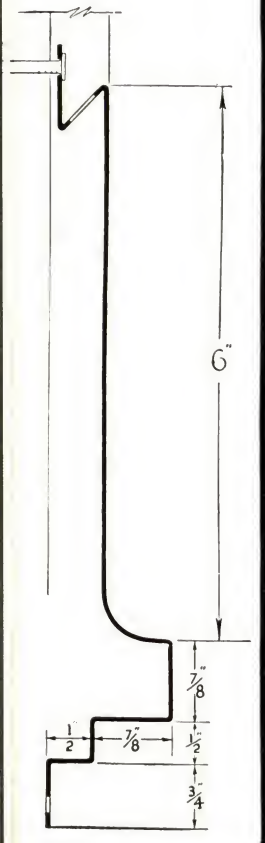
Nos. 601 and 611 METAL BASES
(IN 600 and 610 SERIES)

See general specification data on page 23.

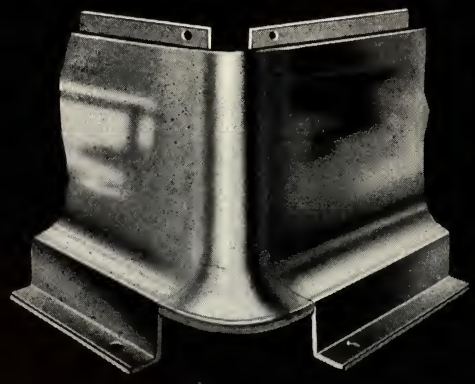
The Metal Bases shown below are included in the 600 and 610 groups but numbered 601 and 611 because they have the standard flange. No. 602 has exactly the same contour but utilizes the movable nailing clip for attaching to the wall. (See page 23.)

The 610 Series is identical with the 600 Series except that the lower flange is attached to the wall instead of to the floor. Bases in this series are as follows:

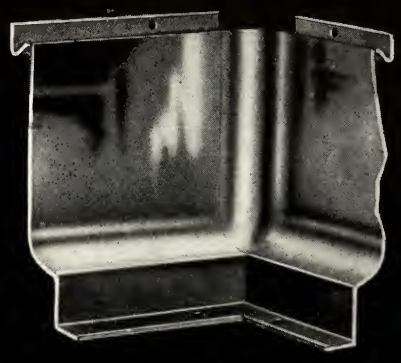
No. 610 With Expanded Metal Flange
No. 611 With Standard Flange, (illustrated)
No. 612 With Movable Nailing Clip



No. 611
Metal Base

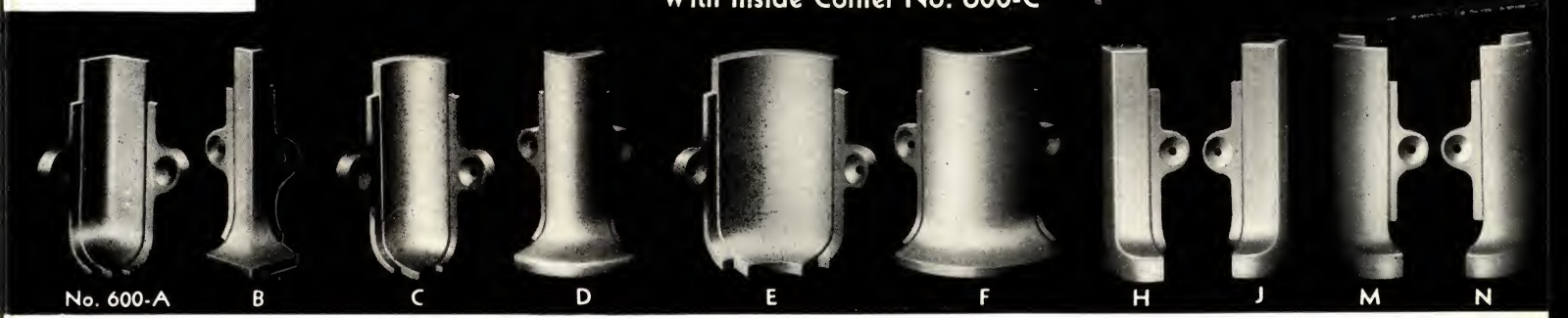


With Outside Corner No. 600-D



With Inside Corner No. 600-C

No. 601
Metal Base



FOUR AND SIX-INCH FITTINGS FOR NOS. 600 AND 610 SERIES

Double Lugs Furnished on Six-Inch Fittings

No. 600-A Square. Inside cast iron corner.
No. 600-B Square. Outside cast iron corner.
No. 600-C ¾-inch radius. Inside cast iron corner.
No. 600-D ¾-inch radius. Outside cast iron corner.
No. 600-E 1 ½-inch radius. Inside cast iron corner.
No. 600-F 1 ½-inch radius. Outside cast iron corner.
No. 600-H Right end. End stop cast iron.
No. 600-J Left end. End stop cast iron.
No. 600-M Right side. Plinth cast iron for No. 4 casing.
No. 600-N Left side. Plinth cast iron for No. 4 casing.

No. 620 PROJECTING TYPE METAL BASES

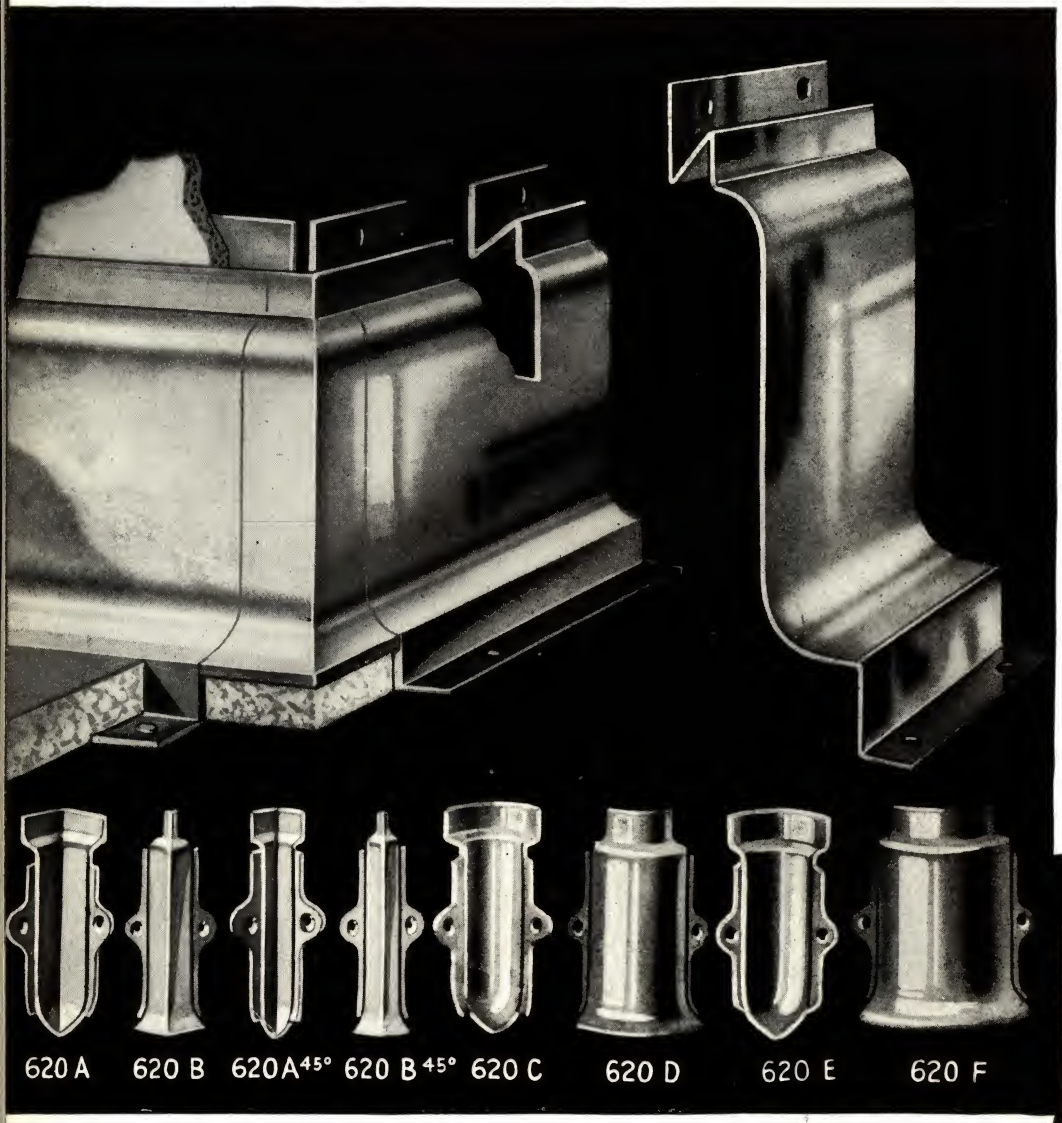
See General Specification Data on page 23

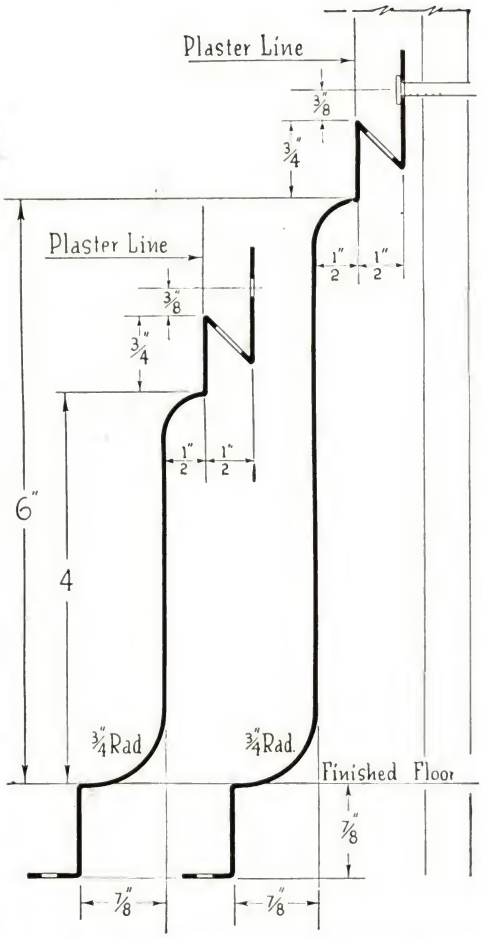
No. 620 — WITH EXPANDED METAL FLANGE
No. 621 — WITH STANDARD FLANGE (ILLUSTRATED)
No. 622 — WITH MOVABLE NAILING CLIP

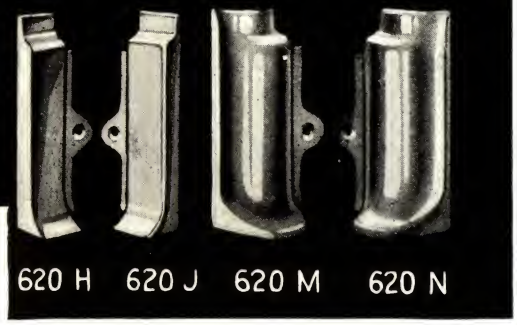
MILCOR

The No. 620 Style of Base Design appeals to many architects and designers because the projection of the base out from the plaster line gives an additional trim effect to the room. The old wood base had to be installed in front of the plaster line and many persons are used to and prefer this appearance.

The No. 620 design is just as practical as other flush-with-plaster type metal bases. Diagram shows dimensions of both 4-inch and 6-inch styles drawn to ½-inch scale.







FOUR-INCH AND SIX-INCH FITTINGS FOR NO. 620 SERIES

Double Lugs Furnished on Six-Inch Fittings

No. 620-A Square. Inside cast iron corner.
No. 620-B Square. Outside cast iron corner.
No. 620-A 45°. Inside corner, 45° angle.
No. 620-B 45°. Outside corner, 45° angle.
No. 620-C ¾-inch radius. Inside cast iron corner.
No. 620-D ¾-inch radius. Outside cast iron corner.
No. 620-E 1½-inch radius. Inside cast iron corner.
No. 620-F 1½-inch radius. Outside cast iron corner.
No. 620-H Right End. End stop cast iron.
No. 620-J Left End. End stop cast iron.
No. 620-M Right Side. Plinth, cast iron, for No. 138 or No. 141 Casing.
No. 620-N Left Side. Plinth, cast iron, for No. 138 or No. 141 Casing.

No. 630 ADJUSTABLE FLUSH TYPE METAL BASES

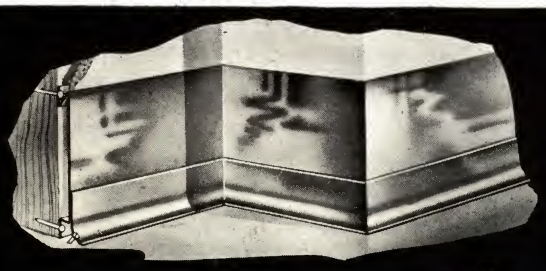
No. 630 — WITH EXPANDED METAL FLANGE
No. 631 — WITH STANDARD FLANGE (ILLUSTRATED)
No. 632 — WITH MOVABLE NAILING CLIP

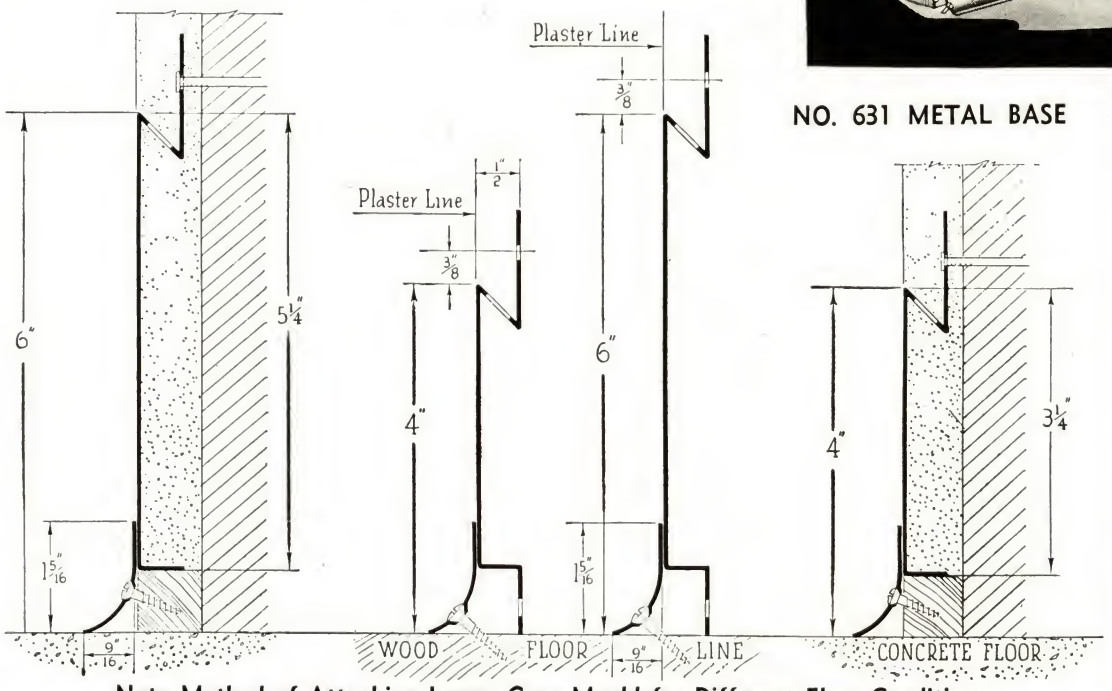
Bases in the 630 Series are especially suitable for wood or linoleum floors. The bases are of the flush type and are provided with an adjustable bottom cove mould. The lower part of the base is erected after plastering and after the floor is laid, by the use of wood screws as shown in detail below. Necessary 1-inch No. 5 oval head wood screws are furnished for the cove of this base.

Specify whether base is to be used for cement or wood floor, so proper lower cove will be furnished.

Note different construction in diagrams.

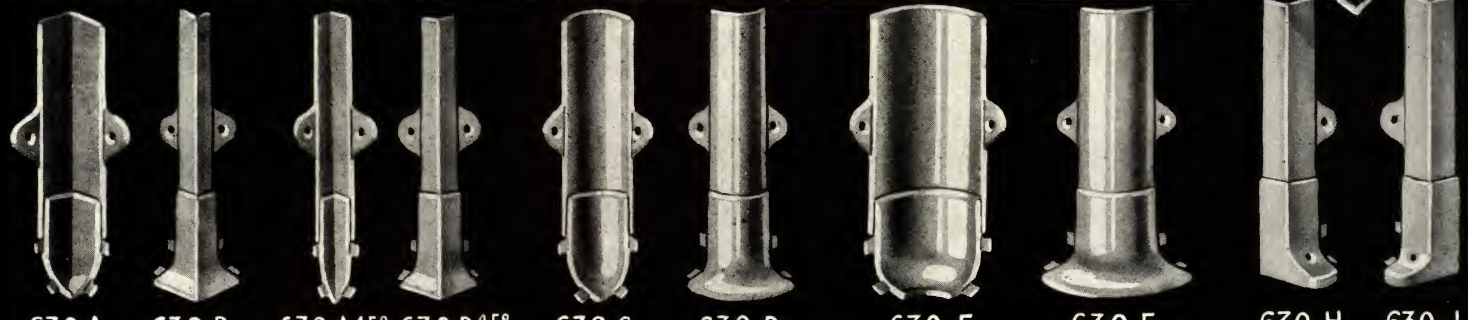
Lower Cove for Bases in No. 630 Series is installed after wall and floor are finished.





Note Method of Attaching Lower Cove Mould for Different Floor Conditions.

NO. 631 METAL BASE



FOUR-INCH AND SIX-INCH FITTINGS FOR NO. 630 SERIES

Double Lugs Furnished on Six-Inch Fittings

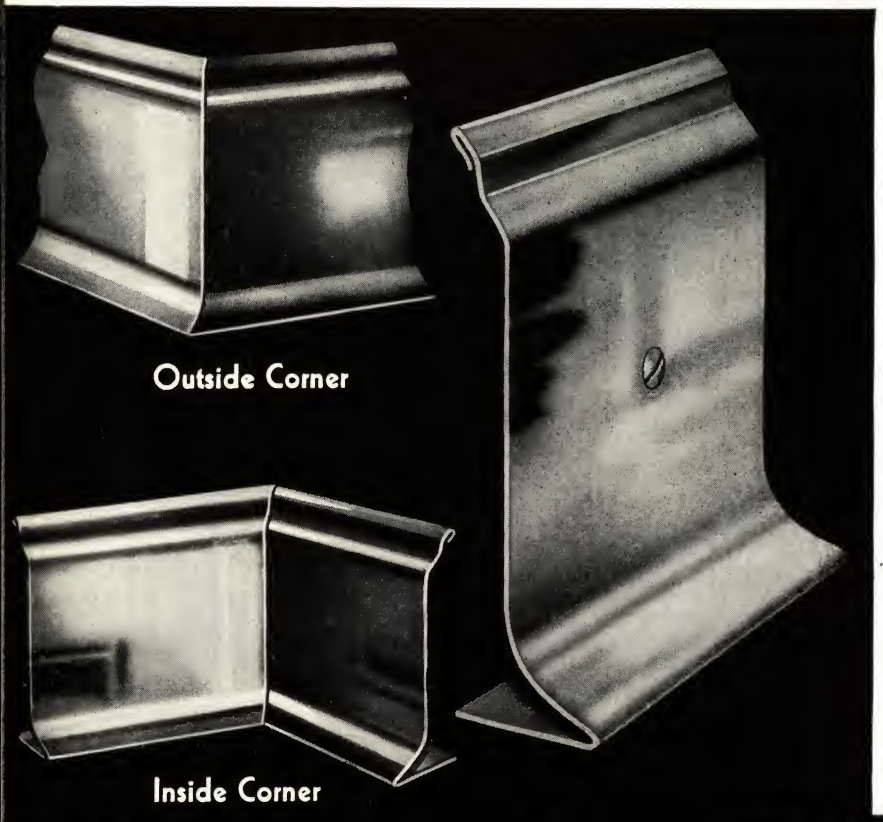
No. 630-A Square. Inside cast iron corner.
No. 630-A 45°. Inside corner, 45° angle.
No. 630-B Square. Outside cast iron corner.
No. 630-B 45°. Outside corner, 45° angle.
No. 630-C ¾-inch radius. Inside cast iron corner.
No. 630-D ¾-inch radius. Outside cast iron corner.
No. 630-E 1½-inch radius. Inside cast iron corner.
No. 630-F 1½-inch radius. Outside cast iron corner.
No. 630-H Left End. End stop cast iron.
No. 630-J Right End. End stop cast iron.

No. 644 REMOVABLE METAL BASE

MILCOR

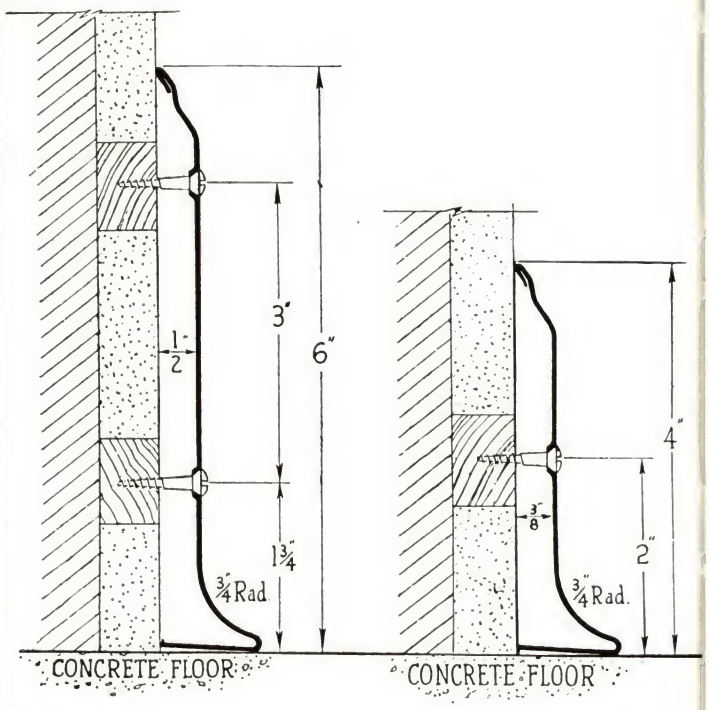
The Milcor Removable Base No. 644 may be used with equal success in new or old buildings. The application of these bases is comparatively simple and their use enhances the appearance of any interior. They are a very important factor in modernizing or dressing up an old building.

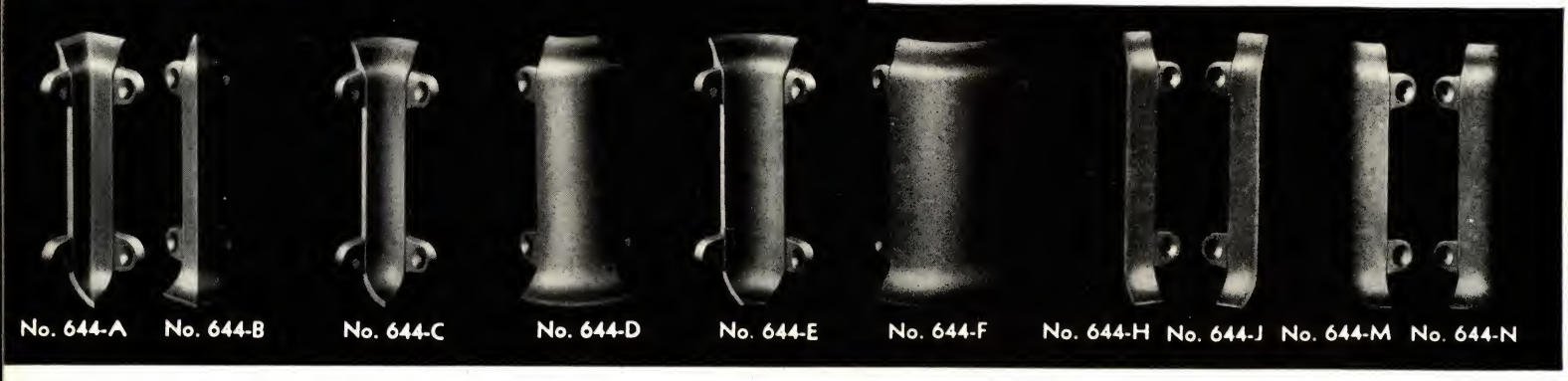
This type of metal base is economically installed because it may be applied after the plastered wall and the flooring have been completed. One or two wooden plaster grounds in the wall, as required according to the size of the base used, are necessary for attaching. The design of the base itself makes a furring strip unnecessary. The bottom flange holds the base in proper position from the wall.



Outside Corner

Inside Corner





No. 644-A No. 644-B No. 644-C No. 644-D No. 644-E No. 644-F No. 644-H No. 644-J No. 644-M No. 644-N

FOUR AND SIX-INCH FITTINGS FOR REMOVABLE METAL BASE NO. 644

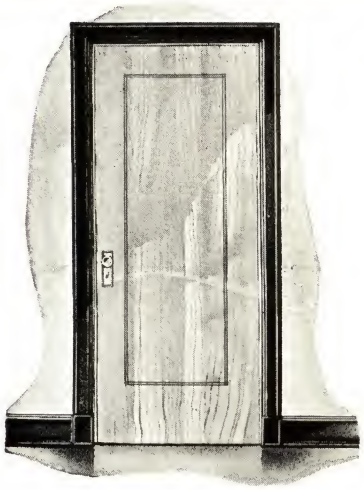
No. 644-A Square. Inside cast iron corner.
No. 644-B Square. Outside cast iron corner.
No. 644-C ¾-inch radius. Inside cast iron corner.
No. 644-D ¾-inch radius. Outside cast iron corner.
No. 644-E 1½-inch radius. Inside cast iron corner.
No. 644-F 1½-inch radius. Outside cast iron corner.
No. 644-H Left Side. End stop cast iron.
No. 644-J Right Side. End Stop cast iron.
No. 644-M Right Side. Plinth, cast iron, for No. 4 Casing.
No. 644-N Left Side. Plinth, cast iron for No. 4 Casing.

No. 645 METAL BASE AND CASING

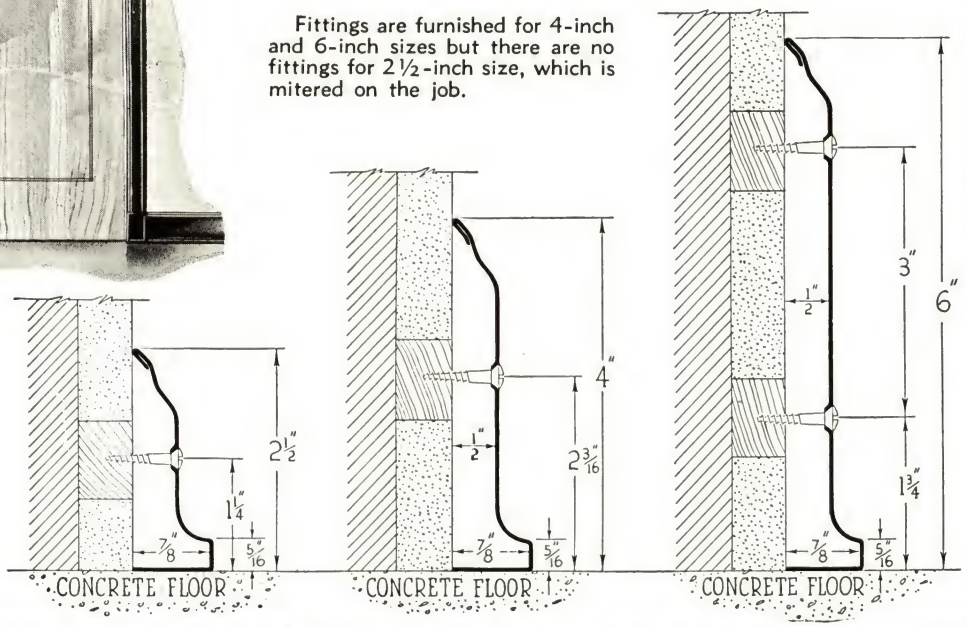
The No. 645 Metal Base is furnished in three sizes as illustrated in cross section diagrams: 2½-inch, 4-inch and 6-inch.

These Bases are designed for use with concrete floors. They may also be used as door casings, as indicated in the illustration to the left. The design is dignified, artistic and economical, and the combination of Metal Base and Door Casing as shown, has met with considerble favor among architects and contractors.

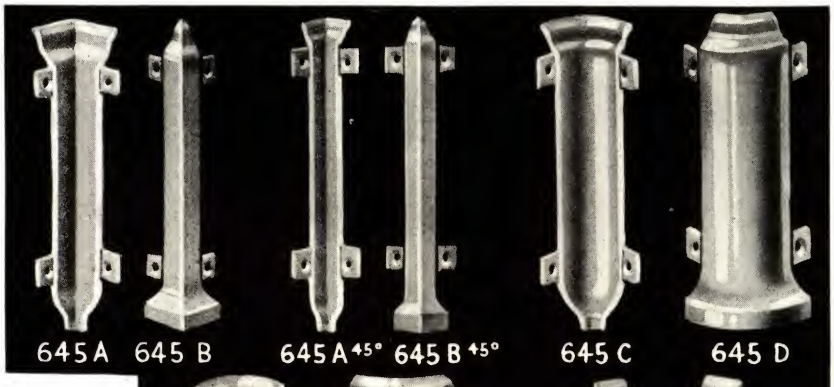
No. 5 1-inch Oval Head Wood Screws are furnished for fastening metal base to wood grounds. Holes for attaching base to grounds are punched at the factory but holes for attaching fittings are punched on the job.

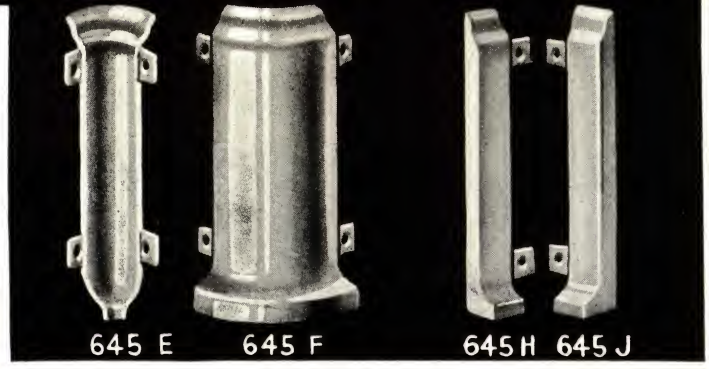


Fittings are furnished for 4-inch and 6-inch sizes but there are no fittings for 2½-inch size, which is mitered on the job.



No. 645 Metal Base





Installation of No. 645

FOUR-INCH AND SIX-INCH FITTINGS FOR NO. 645

No. 645-A Square. Inside cast iron corner.
No. 645-B Square. Outside cast iron corner.
No. 645-A 45°. Inside corner, 45° angle.
No. 645-B 45°. Outside corner, 45° angle.
No. 645-C ¾-inch radius. Inside cast iron corner.
No. 645-D ¾-inch radius. Outside cast iron corner.
No. 645-E 1½-inch radius. Inside cast iron corner.
No. 645-F 1½-inch radius. Outside cast iron corner.
No. 645-H Right End. End stop cast iron.
No. 645-J Left End. End Stop cast iron.

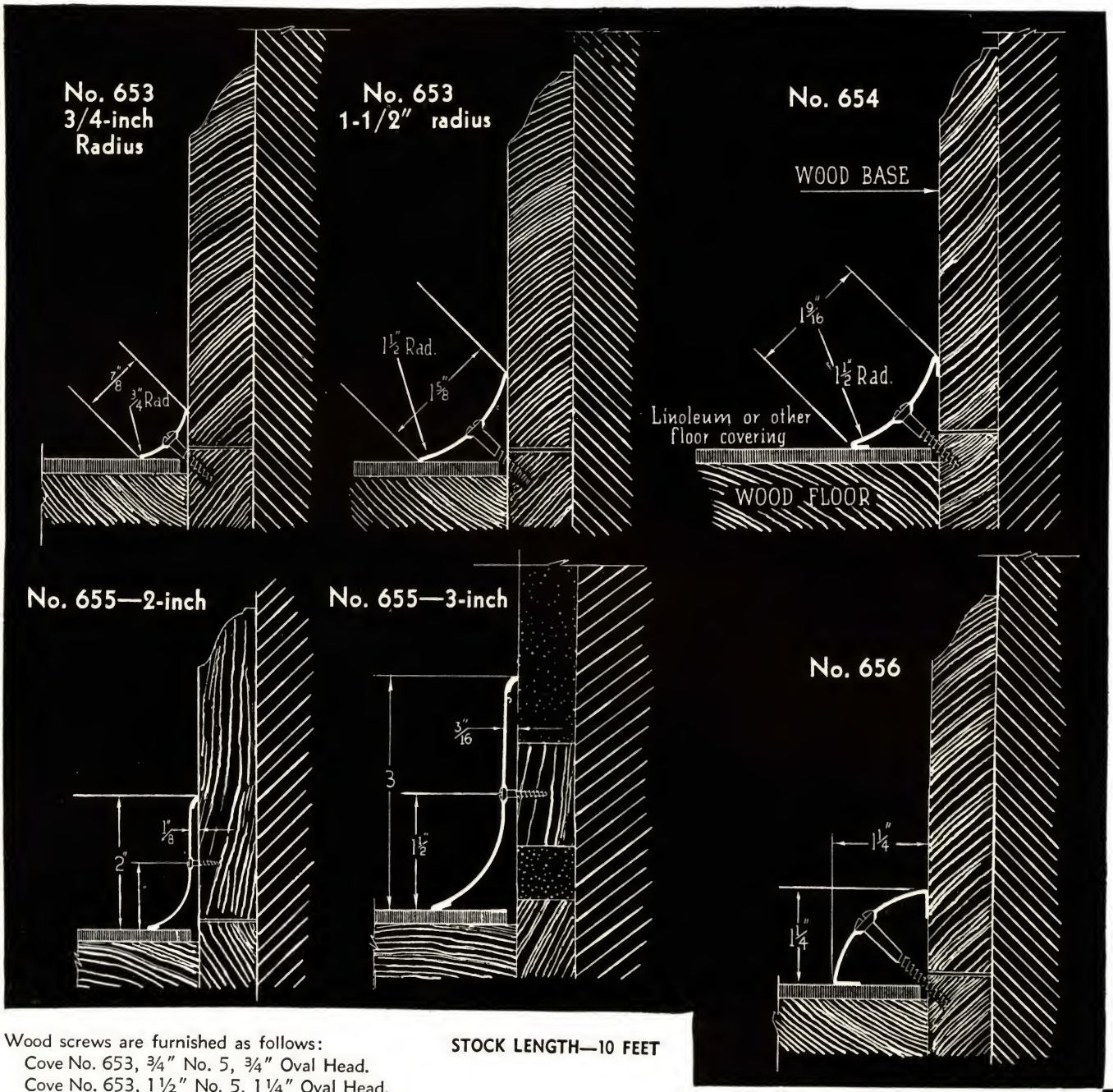
METAL COVE MOULDS

MILCOR

Many uses will be found for these types of Coves and Moulds. All of them are removable, quickly installed and moderate in cost. Frequently they are used in connection with wooden base already installed. They are especially adapted for use with wood floors but are equally well suited to be used over linoleum or carpet.

Cove No. 653, with both ¾-inch and 1½-inch radius, are furnished in 20 gauge steel with gray priming coat. Coves No. 654, 655, in both 2 and 3-inch sizes, and No. 656 are furnished in 24 gauge steel with gray priming coat. All Coves and Moulds are also made in brass, aluminum and stainless steel, on order.

Fittings are furnished for Cove Moulds Nos. 654 and 655. Other Coves are mitered on the job.



Wood screws are furnished as follows:
Cove No. 653, ¾" No. 5, ¾" Oval Head.
Cove No. 653, 1½" No. 5, 1¼" Oval Head.
Cove No. 655, 2" and 3" No. 5, 1" Oval Head.
Coves Nos. 654 and 656—No. 5, 1¼" Oval Head.

STOCK LENGTH—10 FEET

DIAGRAMS ONE-HALF ACTUAL SIZE

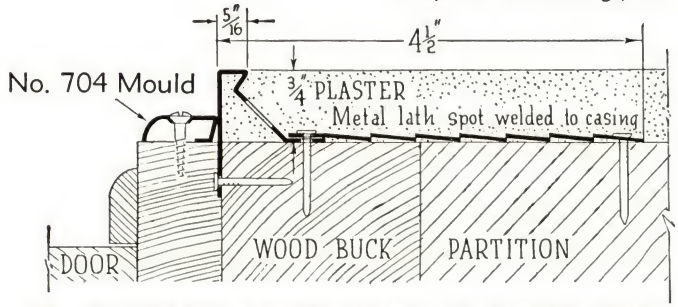
CORNER GROUNDS AND SPECIAL MOULDS

CORNER GROUNDS NO. 65 WITH AND WITHOUT EXPANSION WING

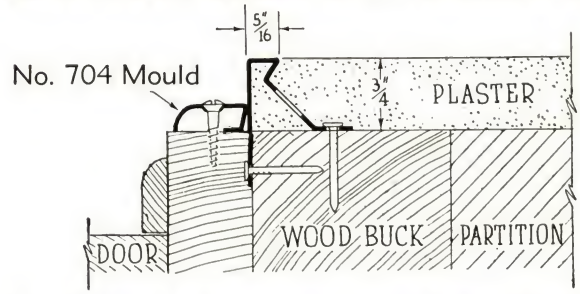
Diagrams give dimensions and show application of the No. 65 Corner Grounds, both with and without Expansion Wing attached. These Grounds are often used in connection with the Casing Moulds illustrated below.

Made from 26 and 24 gauge steel in standard lengths of 6, 7, 7½, 8, 9, 10 and 12 feet.

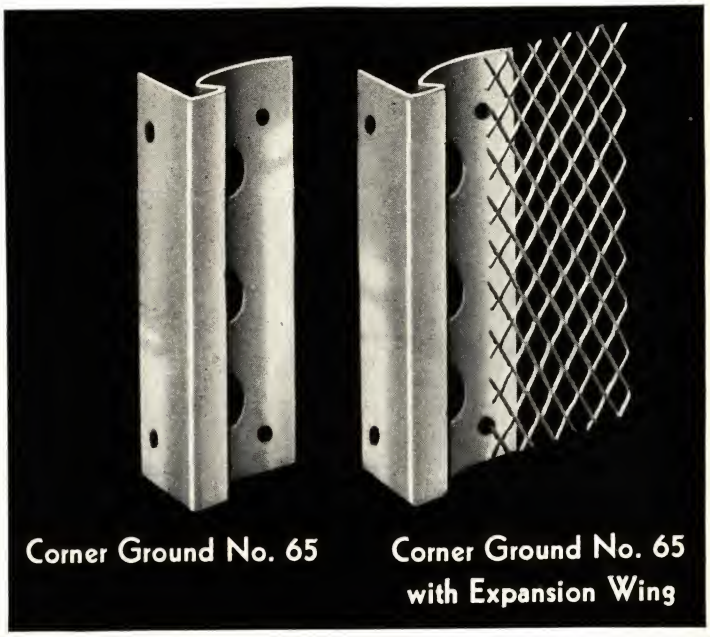
These Corner Grounds are sanitary, easily installed and low priced, and are frequently used in apartment buildings, office buildings, hotels, schools and public buildings.



No. 65 CORNER GROUND WITH EXPANSION WING

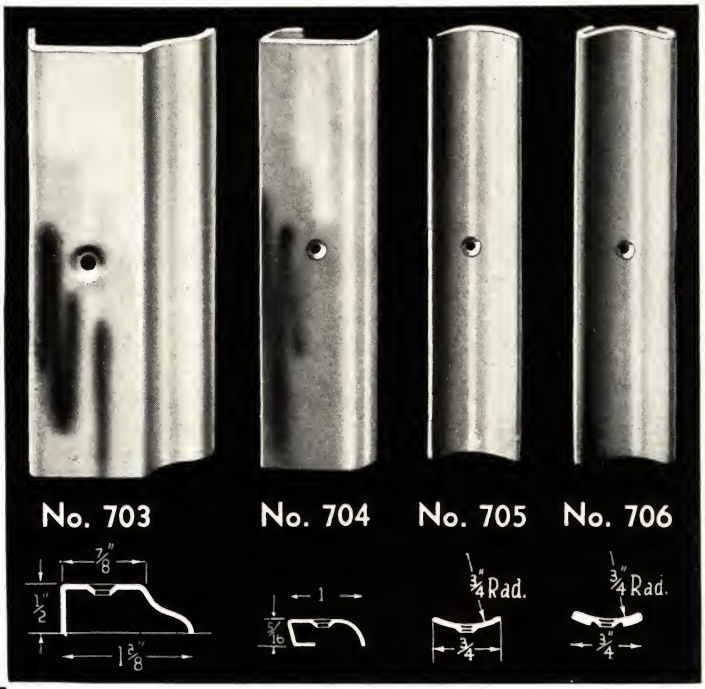


No. 65 CORNER GROUND WITHOUT EXPANSION WING



Corner Ground No. 65

Corner Ground No. 65 with Expansion Wing



SCREW HOLES SPACED 11 INCHES ON CENTERS IN ALL MOULDS.
STANDARD LENGTHS: 6, 7, 7½, 8, 9, 10 AND 12 FEET.

SPECIAL MOULDS FOR CASINGS, WINDOW STOOLS, ETC.

The merit of these Moulds lies in the fact that they are a separate unit from the Casing and consequently building vibration is broken up and sudden jars from slamming of doors are not transmitted to the plaster.

Architects will find many applications for these moulds in connection with metal casings to make a more finished installation.

MOULD SPECIFICATIONS

No. 703 Mould for Casings and Window Trim, 20 ga. steel, gray primed, 1⅜ inch wide—No. 5, 1-inch Oval Head Wood Screws furnished.

No. 704 Casing Mould (may be used as alternative for No. 706 Mould), 24 ga. steel, gray primed, ⅞ inch wide—No. 5, ¾ inch Oval Head Wood Screws furnished.

No. 705 Casing Mould, 20 ga. steel, gray primed, ¾ inch wide—No. 5, ¾ inch Oval Head Wood Screws furnished.

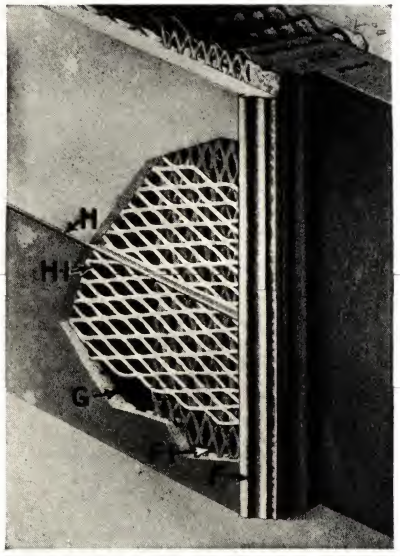
No. 706 Casing Mould (generally used with Casings Nos. 136, 137, 138 and 141), 24 ga. steel, gray primed, ¾ inch wide—No. 5, ¾ inch Oval Head Wood Screws furnished.

MILCOR EXPANSION CASINGS...

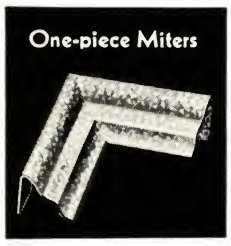
MILCOR

Milcor Expansion Door and Window Casings add a pleasing note of simplicity quite in line with modern trends. The lasting beauty and the practical, durable and firesafe advantages of these materials have for years made them the first choice of many architects and contractors.

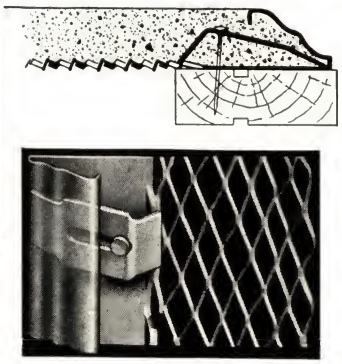
The distinctive feature of Milcor Expansion Casings is the expanded metal wing which provides a secure bond and key for the plaster around doors and windows and other wall openings. Casings Nos. 4, 6, 8 and 9 have the expanded metal wing as an integral part of the nose of the casing.



MITRE CORNERS AND CLIPS FOR CASINGS



One-piece Miters for Expansion Casings No. 4, No. 6 and No. 9 for miter-joint reinforcement. Slip inside the casing. Stamped in one piece from galvanized sheet steel. Weight 80 lbs. per M.



CASING CLIP NO. 2
The phantom view above shows Milcor Expansion Casing Clip No. 2 which can be used with all Milcor Casings and permits the nail to be placed where desired.

CASING CLIP No. 1

EXPANSION CASING PATENT LOCKING CLIP

The Milcor Casing Clip locks Casings firmly to the jamb. Casings are punched with $\frac{7}{16}$-inch round holes, 3 in. on center. Round-head ¾-in. No. 10 or No. 12 screws are driven into the wood jamb customarily 12 in. apart to coincide with casing punchings with heads projecting ⅛ in. The casing is slipped over the screw heads properly aligned and nailed to the buck. Clips are then slipped between the screw head and casing and driven home.

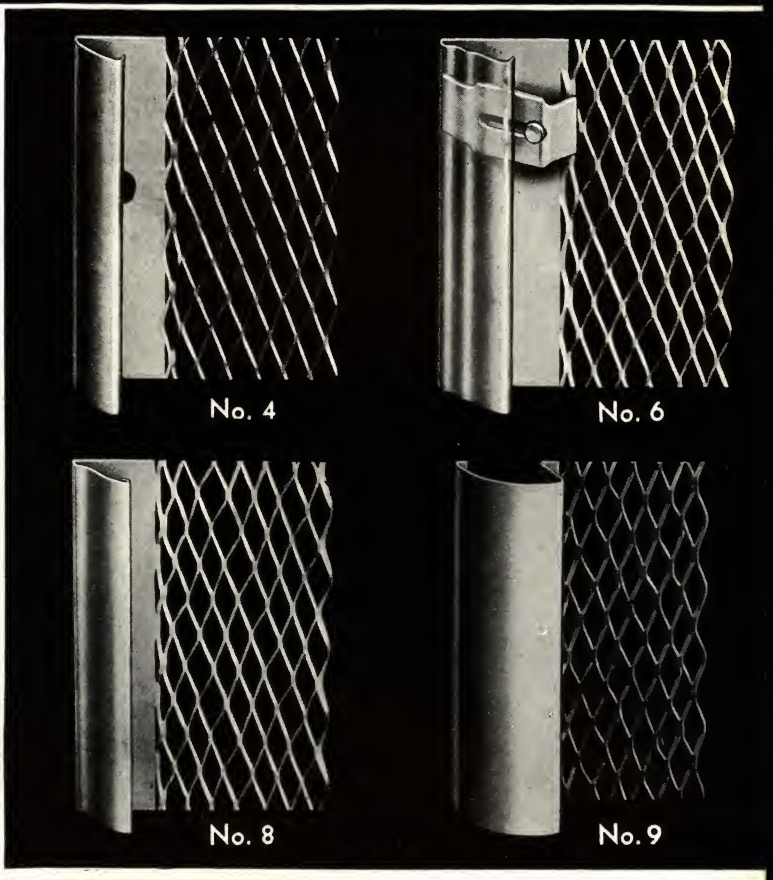
Clips stamped in one piece from galvanized sheet steel. Weight, 15 lbs. per M. Packed in cartons.

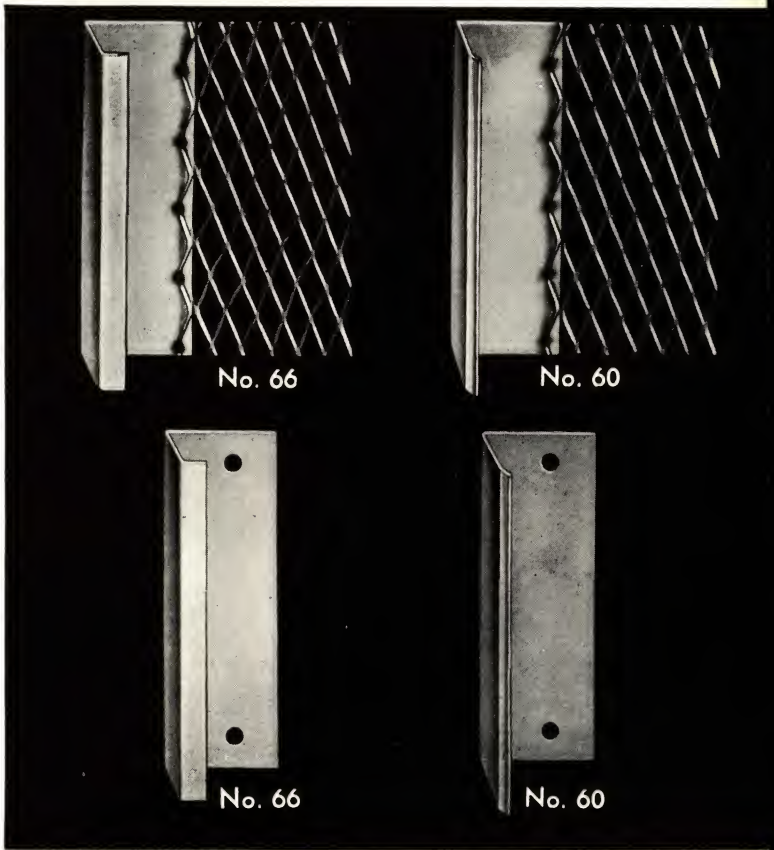
. . . FOR DOORS AND WINDOWS

MILCOR CASINGS

NO. 4 QUARTER ROUND
NO. 6 OGEE
NO. 8 OGEE
NO. 9 SPECIAL QUARTER ROUND
NOS. 60 AND 66 SQUARE

The flush type junction of wall and casing not only insures a sanitary finish, easy to clean, with no cracks to become clogged with dirt, but also provides an air tight feature that eliminates the possibility of cold air coming into the room. There can be no warping or shrinking such as often occurs when wood casings are used.





SPECIFICATION DATA

DESIGNS:

Made in six designs—No. 4 Quarter Round; No. 6—O. G.; No. 8—O. G.; No. 9, Special Quarter Round, and Styles Nos. 60 and 66, as shown in cross sections above.

Styles Nos. 60 and 66 are also made without Expansion Wings in both 20 and 24 gauge metals, with ½, ⅝ and ¾-inch grounds.

MATERIALS

Sheet Steel Galvanized—Nos. 4, 6, 8 and 9 cut from 24-gauge sheets. Nos. 60 and 66 cut from 20 and 24-gauge sheets.

Armco Ingot Iron or Toncan Iron Galvanized—Cut from 24-gauge sheets.

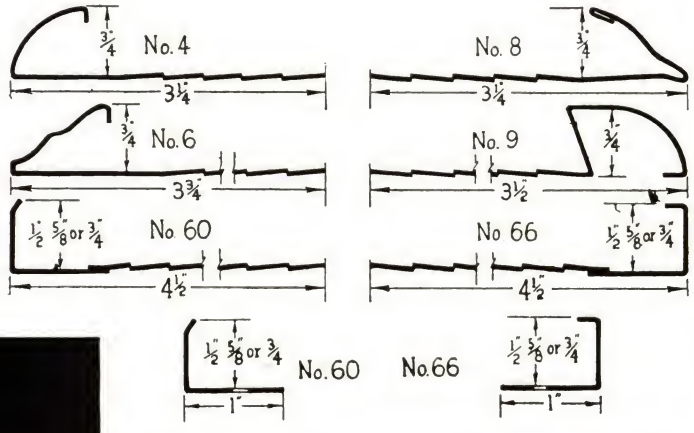
Pure Zinc—Cut from No. 12 sheets.

Cold Rolled Copper—Cut from 16-oz. sheets.

LENGTHS AND WEIGHTS

7, 7½, 8, 9, 10 and 12 ft. long. Weight of designs No. 4, Quarter Round, No. 6—O. G.; No. 8—O. G.; and No. 9, Special Quarter Round—200 lbs. per 500 lin. ft. crated.

WEIGHTS OF STYLES	LBS. PER 1000 LINEAL FEET	
	24-Gauge	20-Gauge
No. 60 (with Expansion Wings)	310	400
No. 66 (with Expansion Wings)	310	400
No. 60 (without Expansion Wings)	190	280
No. 66 (without Expansion Wings)	190	280



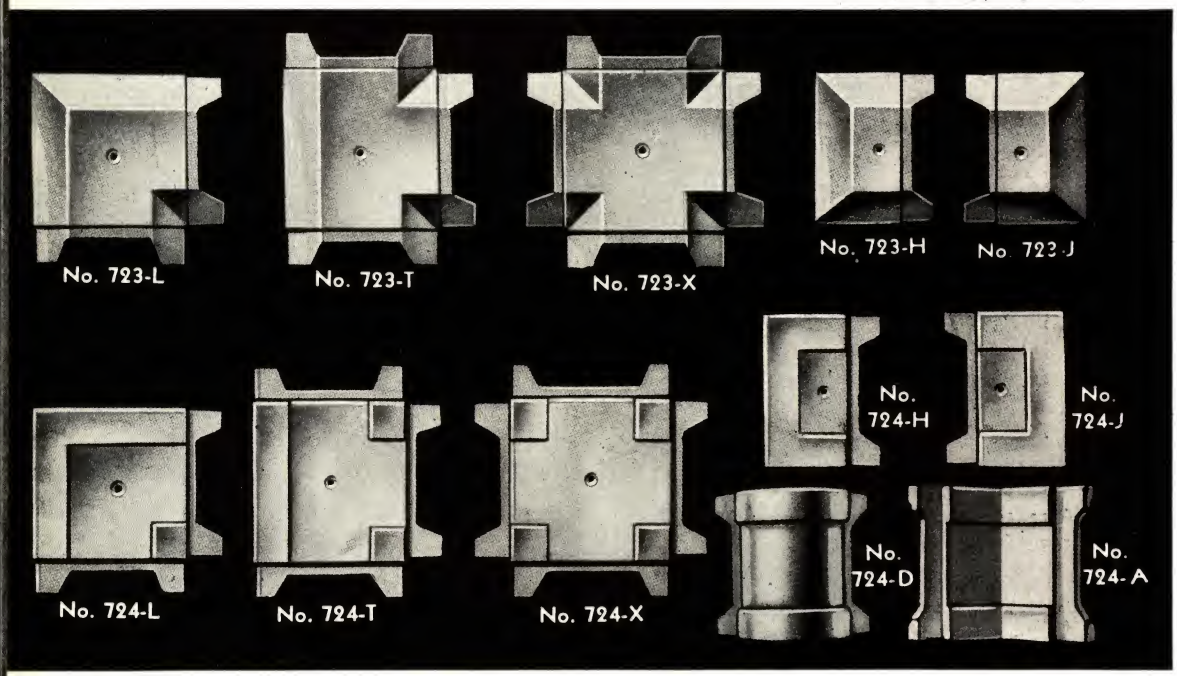
MILCOR

METAL BLACKBOARD MOULDS NOS. 723 AND 724

The two types of Blackboard Mould illustrated here will be found equally satisfactory. Almost any blackboard design can be made with these Moulds and the Fittings which accompany them. Chart below shows number of practical blackboard designs.

Made from 20 gauge steel, gray primed, and furnished in 10 foot lengths. Wood Screws furnished as follows:

For No. 723 Mould, No. 5, 1-inch Oval Head Screws
For No. 724 Mould, No. 8, ¾-inch Round Head Screws

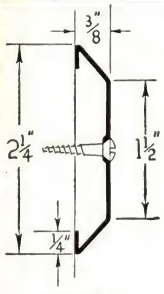


FITTINGS FOR No. 723 BLACKBOARD MOULD

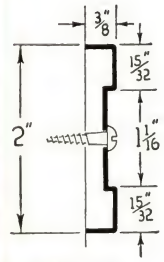
No. 723-L Corner Fitting.
No. 723-T "T" Fitting.
No. 723-X Cross Fitting.
No. 723-H Right End Stop.
No. 723-J Left End Stop.

FITTINGS FOR NO. 724 BLACKBOARD MOULD

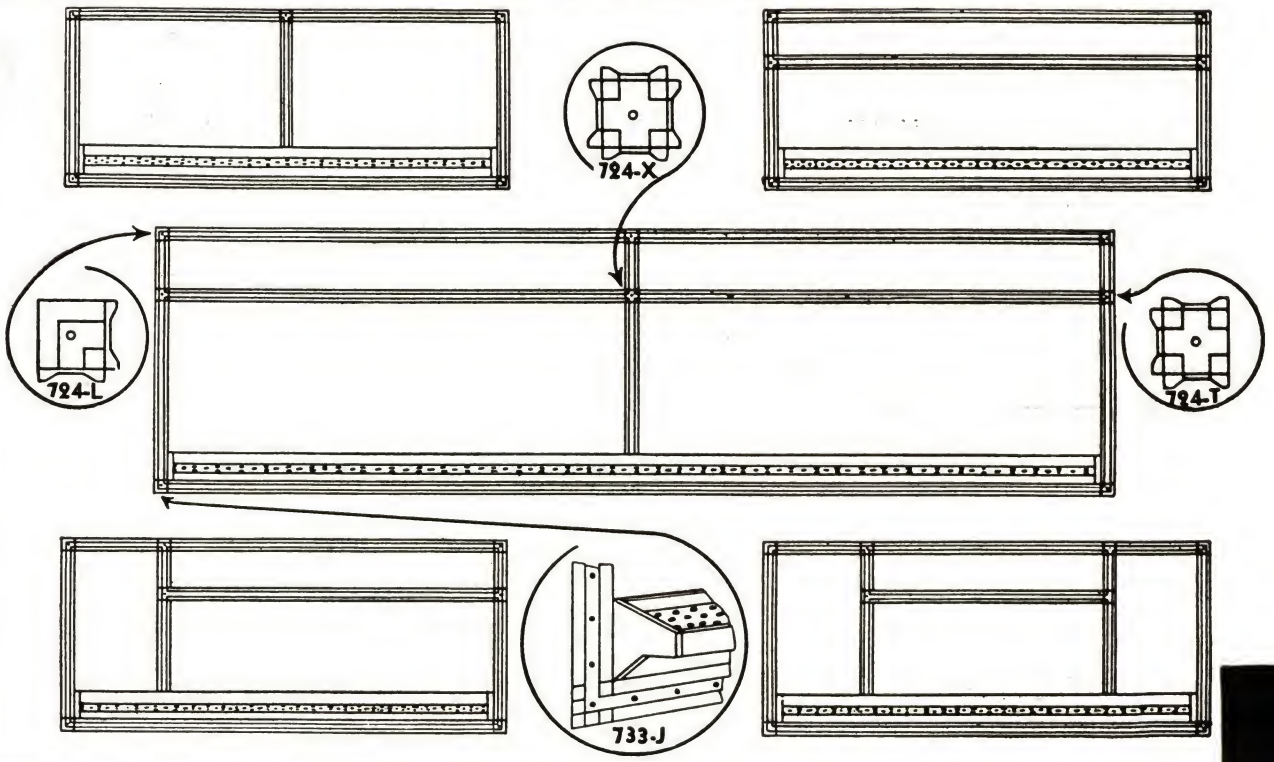
No. 724-L Corner Fitting.
No. 724-T "T" Fitting.
No. 724-X Cross Fitting.
No. 724-H Right End Stop.
No. 724-J Left End Stop.
No. 724-D Outside Corner, ¾ round.
No. 724-A Inside Corner, Square.



PROFILE No. 723 MOULD

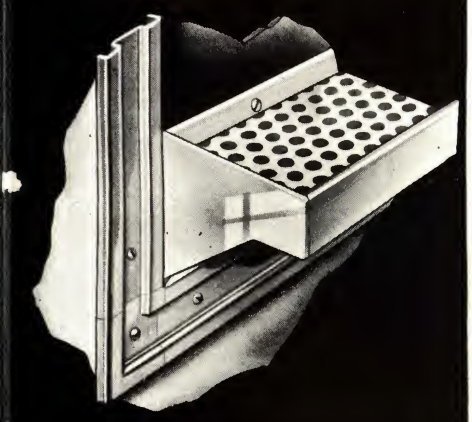


PROFILE No. 724 MOULD



METAL CHALK TROUGHS NOS. 733 AND 734

No. 733 CHALK TROUGH



The two styles of Chalk Troughs, Nos. 733 and 734, are equally practical. A selection of one or the other depends upon the appearance desired. They are interchangeable with Blackboard Moulds Nos. 723 and 724 shown on page 34.

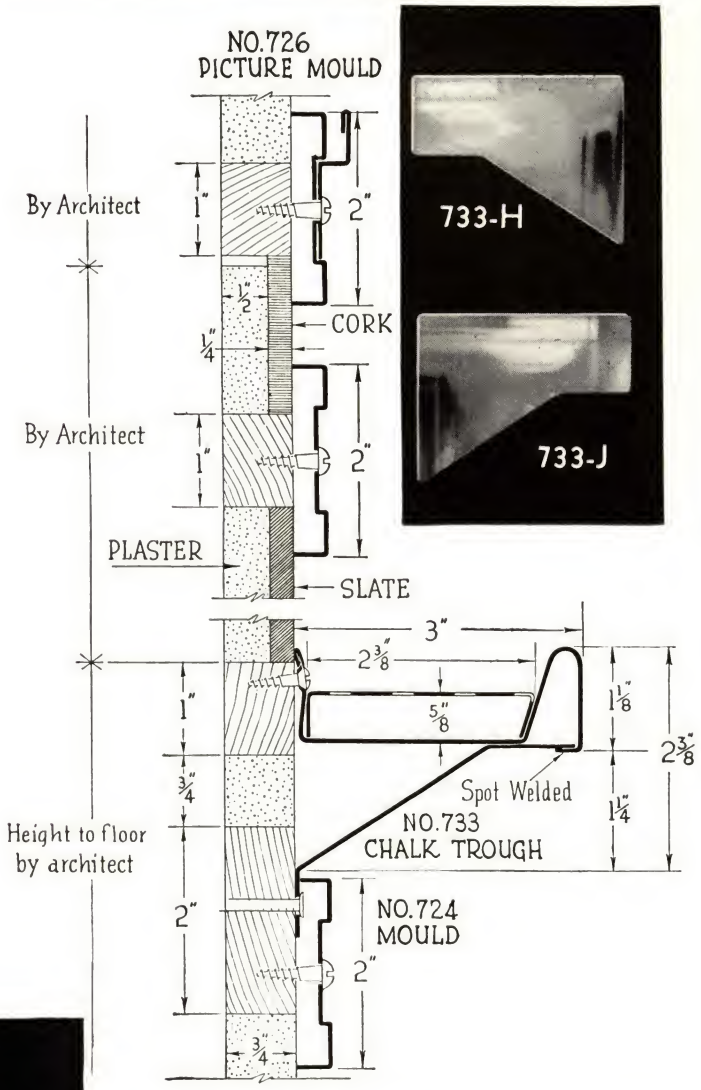
Made from 24 gauge steel, gray primed, and furnished in 6, 8 and 10 foot lengths. No. 5, ¾-inch Oval Head Wood Screws furnished for attaching upper flange to wood grounds.

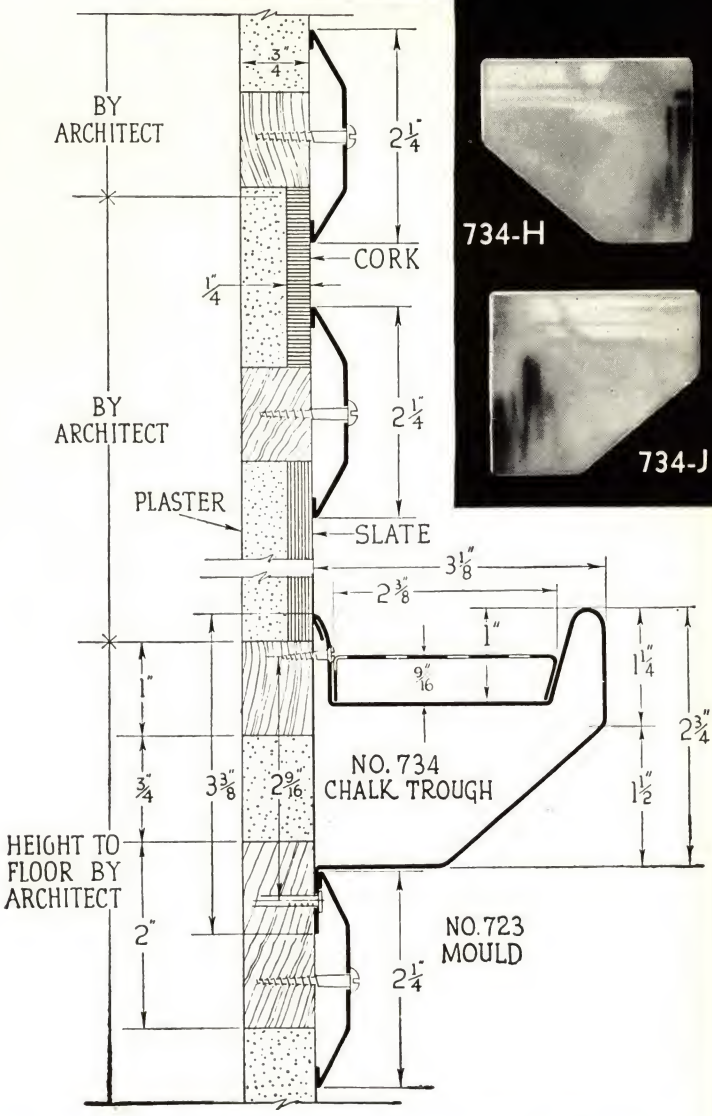
Right and Left End Stops are attached with machine screws.

FITTINGS FOR NO. 733 CHALK TROUGH
No. 733-H. Right End Stop.
No. 733-J. Left End Stop.

FITTINGS FOR NO. 734 CHALK TROUGH
No. 734-H. Right End Stop.
No. 734-J. Left End Stop.

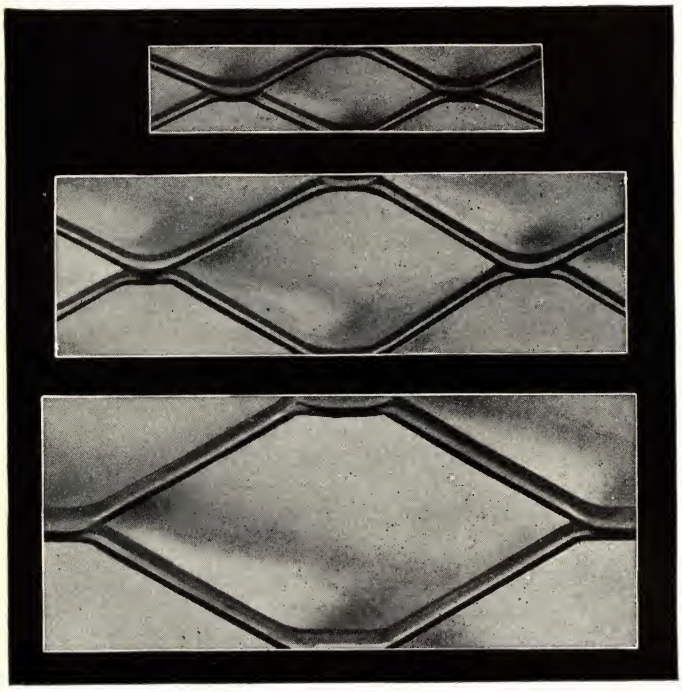
No. 734 CHALK TROUGH

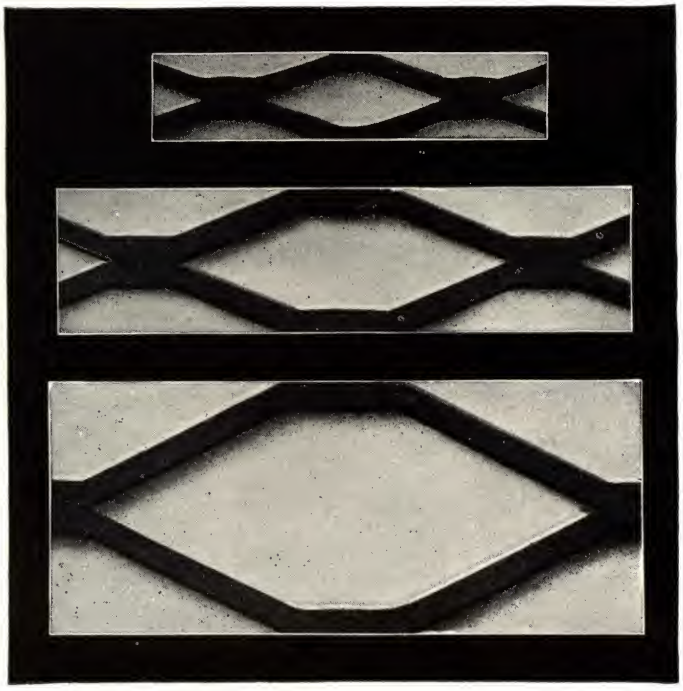




MILCOR EXPANDED AND FLAT EXPANDED METAL

Expanded Metal can be easily handled and worked. It has great strength and possesses adaptability for extensive use in many types of construction.





USES FOR EXPANDED METAL

Window, Door and Skylight Guards—Machinery Guards—Open Partitions—Concrete Reinforcement for Doors, Walls, Roof Slabs, Tanks, Etc.—Treads and Walkways, Air Conditioning Grilles—Station Platform Guards—Electric Heater Grids—Museum Guards—Ventilator Screens—Rubbish Burners—Cages and Runways—Portable Fence—Storage Bins.

FLAT EXPANDED METAL

A distinct innovation for a wide number of uses where heretofore wire mesh, or wire rods and perforated metal only were available. Milcor Flat Expanded Metal is cut, expanded and flattened from single sheets of steel, making it exceptionally strong and rigid. The diamond mesh pattern is uniform and the strands are free from burrs or roughness.

EXPANDED METAL

Designation	Weight in lbs. Per Sq. Ft. Plain	Galv.	Width of Sheet	Length of Sheet
½ inch No. 26. .	.26		6′0″, 4′0″ and 8′0″	8′0″
½ inch No. 24. .	.35		6′0″, 4′0″ and 8′0″	8′0″
½ inch No. 22. .	.43		6′0″, 4′0″ and 8′0″	8′0″
½ inch No. 20. .	.53		6′0″, 4′0″ and 8′0″	8′0″
½ inch No. 18. .	.74	.78	6′0″ also 4′0″	8′8″
¾ inch No. 16. .	.50	.53	6′6″ only	8′0″
*¾ inch No. 13. .	.80	.84	6′0″ also 4′0″	8′0″
¾ inch No. 10. .	1.19	1.25	4′0″ only	8′0″
¾ inch No. 9. .	1.80	1.89	4′0″ only	8′0″
1½ inch No. 13. .	.60	.63	6′0″ also 4′0″	8′0″
†1½ inch No. 10. .	.79	.84	6′0″ also 4′0″	8′0″
1½ inch No. 9. .	1.19	1.25	6′0″ only	8′0″

*Also furnished from stock 6′ x 10′, 6′ x 12′. †Also furnished from stock 4′ x 12′, 6′ x 10′, 6′ x 12′; (Sheets of special size by arrangement).

FLAT EXPANDED METAL

Style Number	Weight in Pounds Per Sq. Ft.	Width of Sheet	Length of Sheet
½ inch No. 18-20. . . .	.70	3′ or 4′	8′
½ inch No. 16-18. . . .	1.00	3′ or 4′	8′
¾ inch No. 16-18. . . .	.61	3′ or 4′	8′
¾ inch No. 14-16. . . .	.81	3′ or 4′	8′
1½ inch No. 16-18. . . .	.37	3′ or 4′	8′
1½ inch No. 14-16. . . .	.48	3′ or 4′	8′
¾ inch No. 9-11.	1.69	3′ or 4′	8′
1½ inch No. 9-11.	1.13	3′ or 4′	8′

The first digit of the Style Number is the nominal opening the short way of the diamond or the direction of the width of the sheet; the second digit indicates approximate gauge of plate from which the unflattened expanded metal was cut; the third digit indicates approximate gauge of mesh after flattening.

for CONCRETE REINFORCING . . . WINDOW GUARDS . . . SKYLIGHT GUARDS FENCING . . . MACHINERY GUARDS *and* INDUSTRIAL PARTITIONS

PARTITIONS

Milcor Expanded Metal is particularly suitable for building partitions because it is strong and durable . . . compact and economical. It permits light, airy enclosures . . . and is **Firesafe.** Milcor Partition Bar Accessories are designed for quick construction.

DOOR AND WINDOW GUARDS

Guards for windows and doors can be quickly and economically constructed with Milcor Expanded Metal and Accessory Framing Products. Frame Bar, Frame Bar Corners, Curved Hinges, Milcor Clips, facilitate rapid erection.

SKYLIGHT GUARDS

Milcor Expanded Metal has no equal for use in constructing Skylight Guards. Its strength and rigidity provide great protection . . . the open mesh allows for maximum passage of light and air . . . and the erection is simple and easy with the aid of Milcor Frame Bars, Frame Bar Corners, and Accessories.

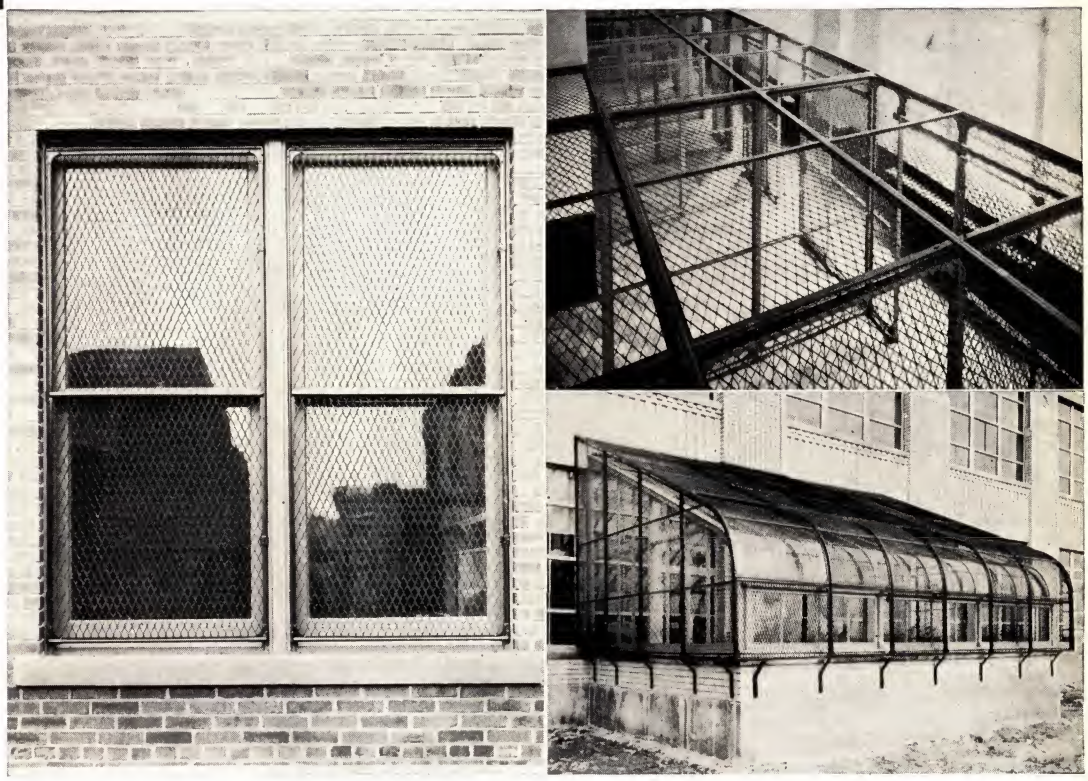
MACHINERY GUARDS

Milcor Expanded Metal is especially designed for and adapted to the making of Safety Guards for machinery, and is considered standard for this work. Due to the process of manufacture, it is so strong that it will withstand any amount of vibration and stress. The open mesh, free from burrs, permits easy cleaning with a stiff wire brush, from the outside. The sheets are fabricated in standard widths for economical cutting . . . and can be bent and formed to fit any particular machine.

THE MOST PRACTICAL MATERIAL FOR FACTORY PARTITIONS AND GUARDS OF ALL KINDS

Made from a single sheet, Milcor Expanded Metal has great strength and rigidity . . . far greater than welded or woven fabrics. The strands are clean and smooth . . . there are no burrs or rough spots to interfere with the erecting of Expanded Metal. The sheets can be cut in any direction to form pieces of varying sizes . . . the strands will not ravel or loosen. Milcor Expanded Metal can be readily formed in any desired shape for countless purposes with surprising economy.

If you are interested in a special fabrication of Milcor Expanded Metal, write the Milcor Engineering Department for the solution of specific problems.



Illustrations show adaptability for Milcor Expanded Metal for Window Guards, Open Partitions, and Conservatory Guards.

MILCOR EXPANDED METAL REINFORCING MESHES FOR CONCRETE WORK

Style Number	Cross Sectional Area	Weight, Pounds Per Sq. Ft.	Width of Sheets Short Way of Diamonds	Size of Diamond	Length of Sheets Mill Shipment
3-13-075	.075	.25	6′ 4″	3″x8″	8′-10′-12′-16′
3-13-10	.10	.34	7′ 0″	3″x8″	8′-10′-12′-16′
3-13-125	.125	.42	5′ 8″	3″x8″	8′-10′-12′-16′
3-9-15	.15	.51	7′ 0″	3″x8″	8′-10′-12′-16′
3-9-175	.175	.60	6′ 0″	3″x8″	8′-10′-12′-16′
3-9-20	.20	.68	5′ 3″	3″x8″	8′-10′-12′-16′
3-9-25	.25	.85	4′ 2½″	3″x8″	8′-10′-12′-16′
3-9-30	.30	1.02	7′ 0″	3″x8″	8′-10′-12′-16′
3-9-35	.35	1.19	6′ 0″	3″x8″	8′-10′-12′-16′
3-4-40	.40	1.36	4′ 7″	3″x8″	8′-12′-16′
3-4-45	.45	1.53	4′ 1″	3″x8″	8′-12′-16′
3-4-50	.50	1.70	7′ 4″	3″x8″	8′-12′-16′
3-4-55	.55	1.87	6′ 8″	3″x8″	8′-12′-16′
3-4-60	.60	2.04	6′ 1½″	3″x8″	8′-12′-16′

NOTE: When ordering, specify style number, length of sheets wanted and quantity of sheets required.

MILCOR MANUAL

FIREPROOF BUILDING PRODUCTS

MILCOR STEEL COMPANY

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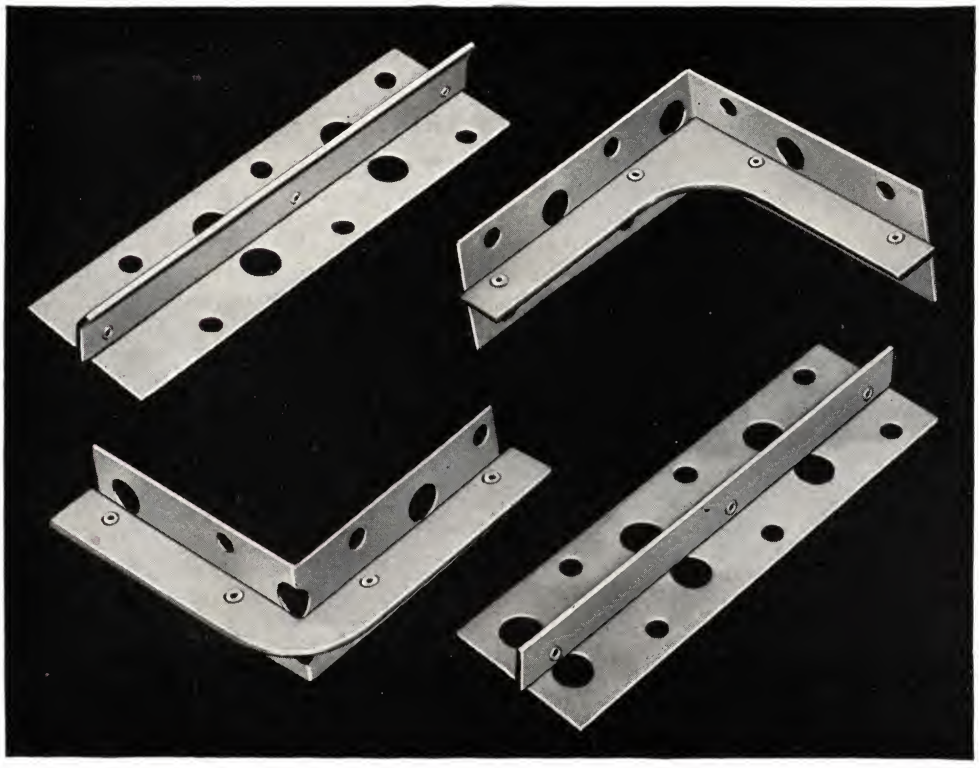
MANHATTAN TERRAZZO BRASS STRIP CO., INC.

1915 Park Avenue
NEW YORK, N. Y.

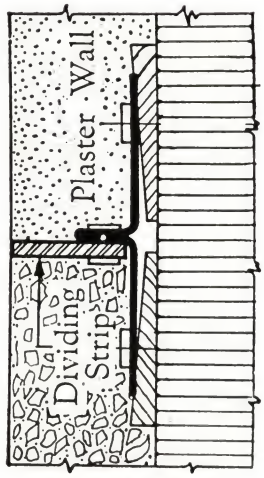
TELEPHONE
HArlem 7-6656

For Manhattan Metal Strips for Terrazzo, Cement, and Composition Flooring, see File Index

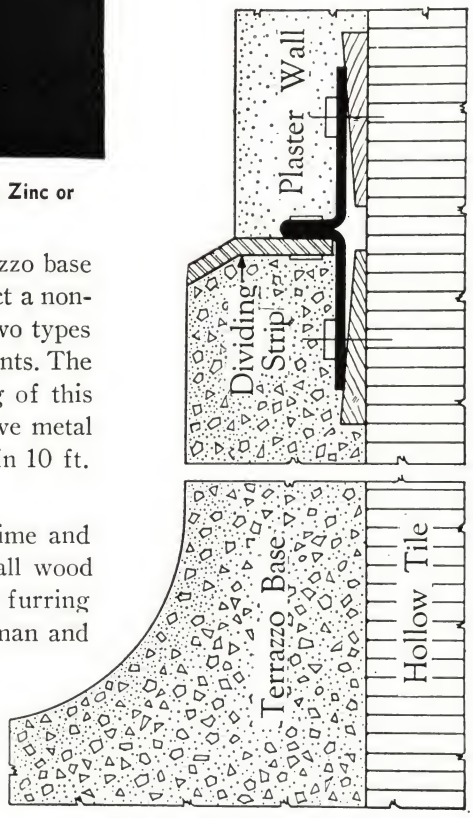
MANHATTAN BASE BEADS—FLUSH AND PROJECTING TYPE



The Above Illustrates Base Beads and Corners Which are Furnished in Brass and White Alloy Zinc or Other Non-corrosive Metal.



FLUSH TYPE



PROJECTING TYPE
Method of Installation

It is frequently desirable, when installing a terrazzo floor, to install a terrazzo base as well. The possibilities of terrazzo as a base material have lead us to perfect a non-corrosive base bead. After considerable experimentation, we arrived at the two types of base beads shown on this page which admirably fill all base bead requirements. The bottom member is made of galvanized metal in "T" shape and to the leg of this member we fasten strips of brass, white alloy zinc or any other noncorrosive metal that may be specified, of any thickness from 16-gauge to ¼ inch. Supplied in 10 ft. lengths.

A base bead of this type enables the contractor to save considerable time and money. Before the development of this base bead, it was necessary to install wood grounds for the terrazzo base. The installation of this metal base bead by the furring and lathing man ended a long standing controversy between the terrazzo man and the plasterer as to who should install the wood ground. When the wood grounds were removed they were a total loss and served no useful purpose. Metal base beads, on the other hand, serve as a ground for both the terrazzo base and the plaster as well as showing up as a decorative strip in harmony with other dividing strips in the base and floor.

Manhattan Corners, also shown on this page, are of similar construction and fill a vital need.

ESTABLISHED 1869

PENN METAL COMPANY, INC.

"Penmetal"—Sixty-ninth Year

BOSTON, MASS., 40 Central Street
LOS ANGELES, CALIF., 647 E. 59th Street
NEW YORK, N. Y., 205 E. 42nd Street
SAN FRANCISCO, CALIF., 6th and Berry Strcets
PARKERSBURG, W. VA.
PHILADELPHIA, PA., 2402 Market Street
DALLAS, TEX., 1313 Sante Fe Building

PRODUCTS

MESHTEX, small mesh Diamond Lath; DURABOND, flat rib lath; MASTERIB, 3/8 in. Rib Lath; PREFURRED (indented or corrugated) Self-furring Lath; WING TYPE, SOLID WIDE FLANGE and BULL NOSE CORNER BEAD; BASE SCREEDS; RAIL BEAD; CORNERITE; STRIPITE; COLD FORMED CHANNELS; a complete line of METAL LATH and ACCESSORIES.

MESHTEX, THE SMALL MESH DIAMOND LATH

Meshtex is a small mesh diamond lath made in standard weights and types of steel. Its mesh is approximately one-third less in size than is the mesh of large mesh diamond lath. The extra wide sheet (27 inches) produces a decided saving in the time required for installation, there being 12% fewer laps than where 24-inch sheets are used.

Meshtex sheets are painted and oven baked dry *each sheet individually before bundling.* Each sheet is resquared singly on the ends, thus eliminating the bends or curls on the extreme ends of the sheet of lath which are unavoidable when the sheets are resquared *after* bundling.

Meshtex is used in all types of buildings; for all types of plain and ornamental plaster; for non-bearing 2-inch solid metal lath and plaster partitions and for fireproofing. Both painted and galvanized Meshtex can be furnished in either the "Indented" or "Corrugated" type which forms a self-furring base and *reinforcement* for exterior stucco.

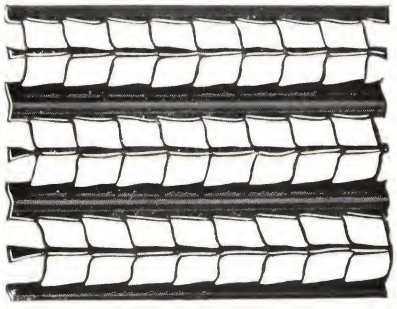
*All "Penmetal" Lath—*MESHTEX, DURABOND, *and* MASTERIB*—are made in one uniform size of sheet, 27x96 in. (2 sq. yds.)*
Packed 10 sheets, 20 sq. yds. per bundle.

MESHTEX IS FURNISHED IN THE FOLLOWING KINDS AND WEIGHTS PER SQ. YD.

Painted Steel	Galvanized Steel	Copper-Bearing Steel	Armco or Toncan
2.2 lbs.	.....	.....	.....
2.5 lbs.	2.5 lbs.	.....	.....
3.0 lbs.	.....	3.0 lbs.	.....
3.4 lbs.	3.4 lbs.	3.4 lbs.	3.4 lbs.

DURABOND, THE 1/8-IN. RIB LATH

The only flat rib lath made in a 27-inch wide sheet.



Durabond is a real economy lath with a uniform mesh of more than usual stiffness due to the frequency and unique form of the ribs and the slanting curvature of intervening meshes. Rigid—plaster saving—labor saving.

Durabond sheets are painted and oven baked dry *each sheet individually before bundling.* 27-inch wide sheets mean 12% fewer laps over 24-inch and 50% over 18-inch sheets.

DURABOND IS FURNISHED IN THE FOLLOWING KINDS AND WEIGHTS PER SQ. YD.

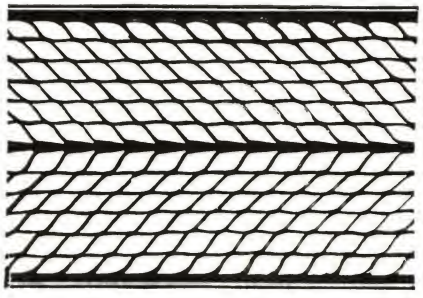
Painted Steel	Galvanized Steel	Copper-Bearing Steel
2.75 lbs.	.....	.....
3.0 lbs.	.....	.....
3.4 lbs.	3.6 lbs.	3.4 lbs.

MASTERIB, THE 3/8-IN. RIB LATH

The only 3/8-inch rib lath made in a 27-inch wide sheet.

Masterib is especially adapted to a large variety of construction where a wide spacing between studs is essential. It combines a "Channel" or "U" shaped rib 3/8 inch high and spaced 4½ inches on center with a mesh formation. This is the ideal lath for bar joist construction, metal dome (tin pan) construction, ceilings, floors or repair work over old plaster ceilings.

Like Meshtex and Durabond, Masterib sheets are not only 27 inches wide but each sheet is painted and oven baked dry *individually before bundling.*



MASTERIB IS FURNISHED IN THE FOLLOWING KINDS AND WEIGHTS PER SQ. YD.

Painted Steel	Galvanized Steel.	Copper-Bearing Steel	Armco or Toncan
3.0 lbs.	.....	.....	.....
3.4 lbs.	3.6 lbs.	3.4 lbs.	3.4 lbs.
4.0 lbs.	.....	.....	.....

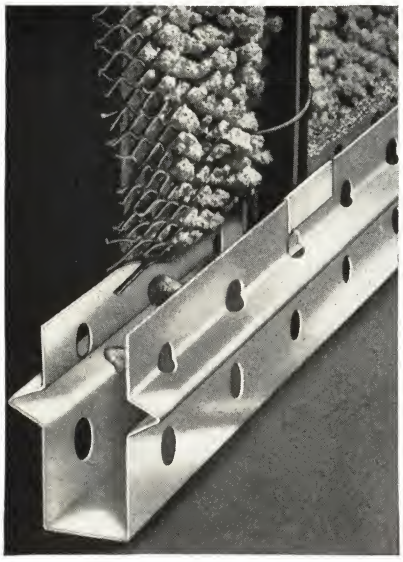
SOLID METAL LATH AND PLASTER PARTITIONS

with Runners and Clips

Penmetal Partition introduces many new and economical features, giving a *straight* wall, a combination metal ground and runner in one piece—eliminating the use of wood grounds and their cost and removal, with consequent patching.

The spacer with slot is placed on the runner to hold the channel iron in place without wiring. Channel iron can be cut to length at the mill, as the spacer provides for variation of 1 inch in heights of ceilings.

It is simple in construction, economical in cost, and can be used with wood, cement or mastic floors. It can also be applied to suspended ceilings or any other form of construction.

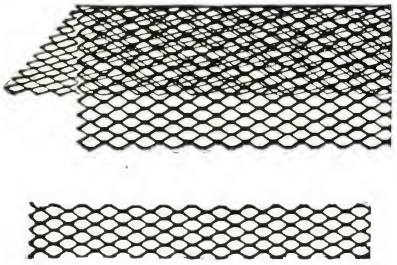


Solid metal lath and plaster partition is a two-way steel reinforced slab. It can be installed at less cost than a wood stud and wood lath partition. A solid metal lath and plaster partition is a two-way steel reinforced vertical slab of plaster 2 inches thick. Studs consisting of steel channels running from floor to ceiling stoutly anchor the partition to floor and ceiling and reinforce it vertically. The entire slab is fully reinforced horizontally and diagonally by sheets of metal lath which are securely attached to the studs and function both as plaster base and reinforcement. Consequently the construction acts as a unit to resist physical impact, wind, fire, water, sound and vibration. Fireproof—space saving.

CORNERITE

A small strip of Meshtex bent at right angles and used for the essential purpose of reinforcing the inside corners of walls and partitions.

Penmetal Cornerite is furnished in either painted or galvanized steel with flanges 2x2, 3x3, and 4x4 inches wide; also special widths as desired. All pieces are 8 feet long.



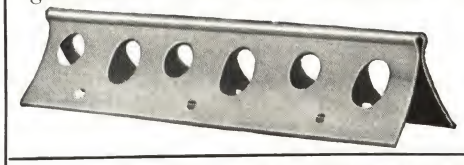
STRIPITE

A small strip of Meshtex essential in reinforcing joints in plaster board.

Penmetal Stripite is furnished in either painted or galvanized steel in 3, 4, and 6-inch widths; also special widths as desired. All pieces are 8 feet long.

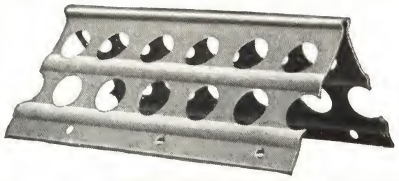
WING TYPE BEAD

The accepted standard type for general construction; it reinforces plaster corners and insures accuracy of line. Made from 26-gauge tight-coat galvanized steel and furnished in standard stock lengths. Crated weight, 200 pounds per 1000 lineal feet.



2½-INCH SOLID WIDE FLANGE BEAD

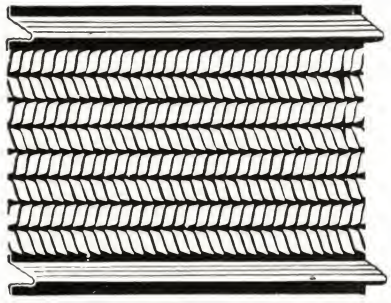
The new and improved type of Penmetal Corner Bead with the same nose as standard wing bead. Made from 26-gauge tight-coat galvanized steel and furnished in standard stock lengths. Crated weight, 380 pounds per 1000 lineal feet.



¾-INCH RIB LATH

Designed for roofing and flooring. Ribs spaced 6 inches on center. Furnished in the following weights:

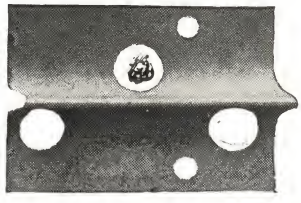
Steel—Per Square Foot
.50 lbs. painted
.60 lbs. painted
.75 lbs. painted
.50 lbs. galvanized
.75 lbs. galvanized
.75 lbs. copper-bearing
.75 lbs. Armco or Toncan



BASE SCREED

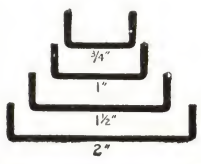
Base Screed unites plaster and cement or tile at the joints and eliminates cracks. Made from 26-gauge tight-coat galvanized steel in ½, ⅝ and ¾-in. grounds.

Crated weight per 1000 lineal feet: ½ inch, 185 pounds; ⅝ inch, 190 pounds; ¾ inch, 200 pounds.



COLD FORMED CHANNELS

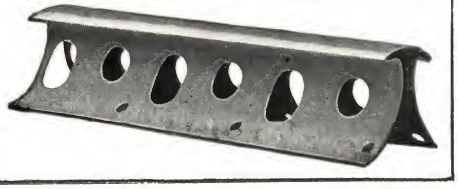
Formed from 16-gauge steel and furnished in the following sizes:



Type, Inch	Stock Lengths, ft.	Wgt. per 1000 ft., lbs.
Standard ¾	16, 20	276
Standard 1	16, 20	332
Standard 1½	16, 20	442
Standard 2	20	553
Pencil	12, 14	113
Box	14, 16, 18, 20	276

BULLNOSED BEAD

Bullnose Bead makes a large rounded corner double fold at nose, providing extra rigidity. ¾-inch radius. Made from 26-gauge tight-coat galvanized steel in standard stock lengths. Crated weight, 360 pounds per 1000 lineal feet.



PETERSON AND NEVILLE, INC.

Manufacturers of Hollow Metal Door Frames and Sanitary Metal Trim

MAIN OFFICE AND FACTORY
365 Dorchester Avenue, BOSTON, MASS.
AGENTS IN PRINCIPAL CITIES

Products

Sanitary Cove Base	Window Trim	Corner Guards	Map Rail
Chair Rail	Special Mouldings	Picture Moulding	Chalk Trough
Door Casings	Stop Bead	Window Stools	Blackboard Trim

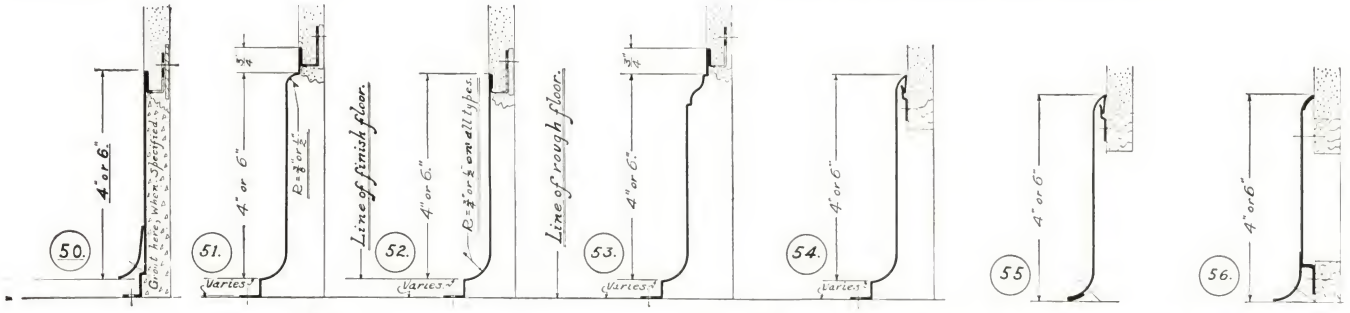
For Our Catalogue on Hollow Metal Door Frames, see File Index

Two Types of Trim

The majority of this trim is made in two types, the self-grounding or plastered-in type, which is applied before plastering, taking the place of wood plaster grounds, and the applied type which is set in place after plastering. We strongly recommend the former type as being neater, stronger and also much more sanitary as it leaves no lodging place for dust or vermin. The extra cost is small, when the saving due to omission of wood grounds is considered.

Flexibility of Design Possible

The construction of our dies permits a flexibility of design which is not possible with ordinary standard equipment, and in many cases we can furnish at no additional cost what is practically a custom-built job, permitting the architect to satisfy his individual desires, and to keep the metal trim in harmony with other material in the buildings. Our Engineering staff will cooperate in working out special mouldings and will be pleased to submit a layout of metal trim for each individual job.



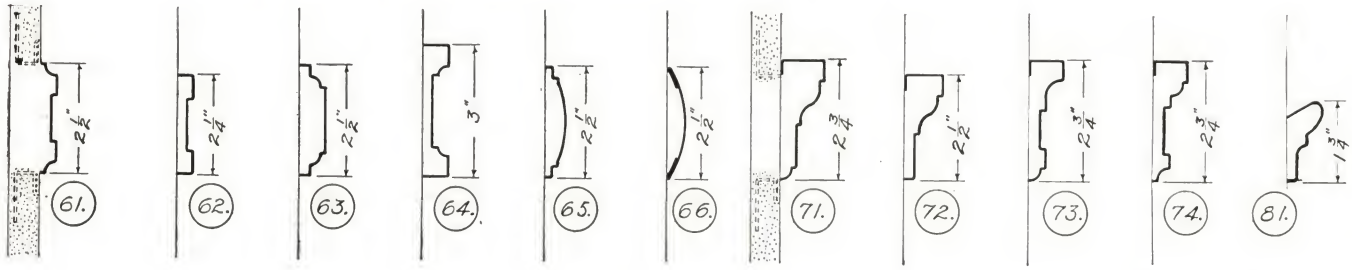
Base

Nos. 50, 51, 52 and 53 are plastered-in types, applied before plaster and finish floor. No. 50 has separate cove, applied after finish floor. No wood grounds required. No. 54 is applied after plaster and before finish floor, the others after plaster and finish floor.

Made from 16, 18, or 20-gauge tight-coat galvanized steel. Space in backfilled with grout where specified. We do not recommend using lighter than 18-gauge without grouting.

Heights shown are standard, but may be varied at slight additional cost. Necessary cast corner fittings and plinths are available.

Our catalog shows full size detail of trim and fittings. Available to architects on request.



Trim

These sections, as shown in solid lines, are all suitable for use as applied metal door trim or chair rails. Nos. 61 and 71 show how flanges may be furnished on all sections for use as plastered in trim. The first six sections may be adapted for use as blackboard trim and the remainder are suitable for window apron as well as door trim, except No. 81 which is a picture moulding. We also furnish standard, concealed picture moulding. All this trim made in 16, 18, and 20-gauge with miters welded at factory. Fittings furnished with chair rail.

Trim is held firmly in place with flat head screws, countersunk below the surface. Holes are filled flush with metal filler, sanded smooth, thus concealing all fastenings. Where it is desirable to remove trim for any purpose, exposed countersunk oval head screws may be used. Sizes may be varied to suit special conditions.

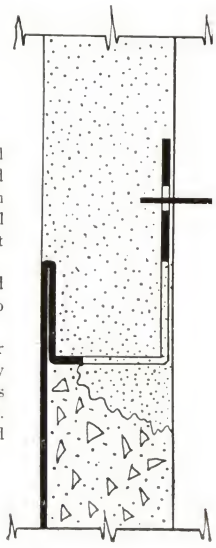
We also furnish a complete line of mouldings designed to snap on over concealed clips, which make a very neat appearance at slight additional cost. These mouldings, as well as those illustrated, may be used as casings on wood door frames or on any of our plain trim metal door frames (see File Index). Made of lighter stock, they have a more clean cut and sharper appearance than integral trim on metal frames.

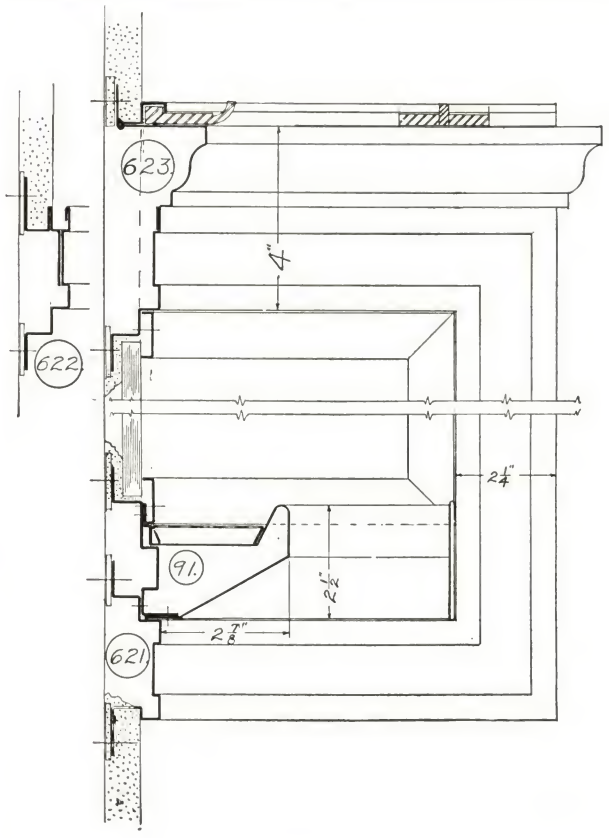
Plaster Flange

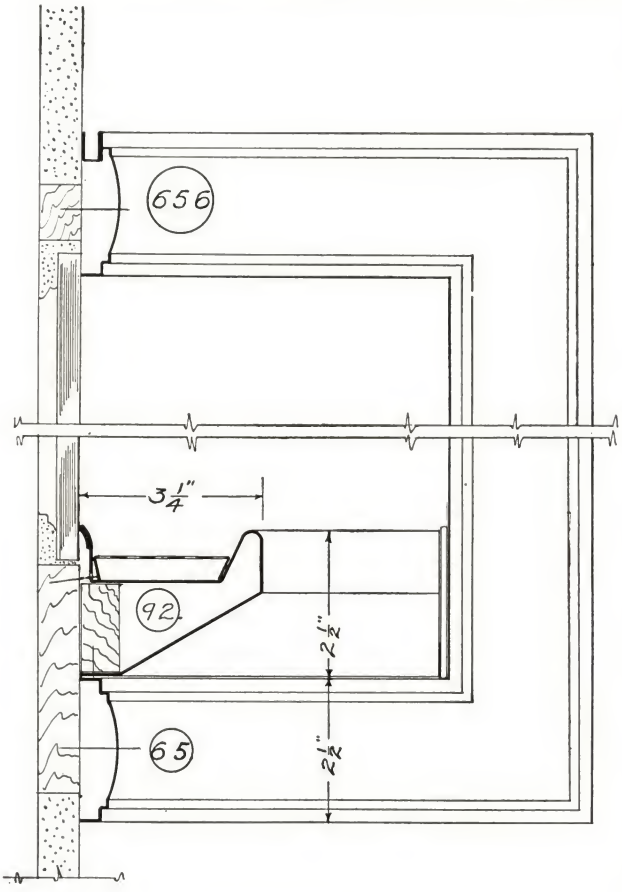
The point of contact between plaster and metal trim of the plastered-in type is one that should receive careful consideration. We show herewith our improved plaster flange, which we use on all trim of this type, and which we have found most satisfactory for this work.

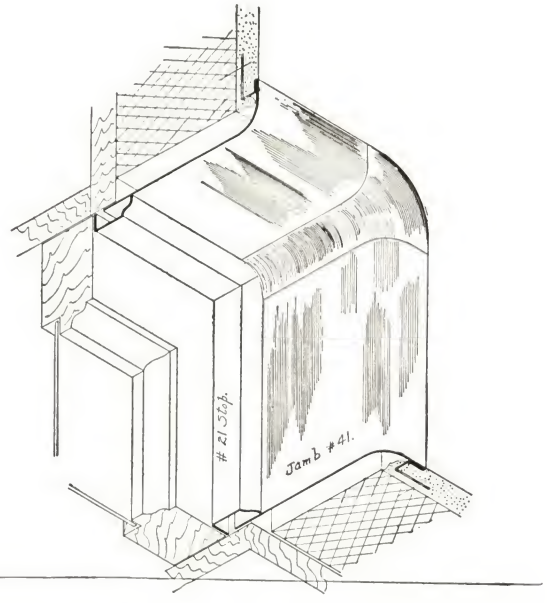
Note that trim and nailing flange are formed from one piece of metal, with no separate clips to loosen or get out of line.

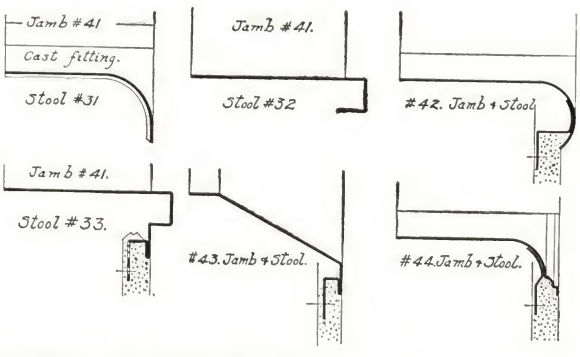
Note also the thin edge where trim meets plaster and the deep recess and perforations which allow plaster to lock firmly behind edge of trim, thus making a solid bond between these two materials. Where specified, we furnish a strip of expanded metal welded to the nailing flange.











Blackboard Trim

We have illustrated on the left above, our type No. 623 trim with cap moulding and map rail, adapted for application before plastering. The cap moulding adds considerably to the appearance and also conceals the map rail. It may be omitted if desired and plain map rail No. 622 used. Any of the six types of door trim may be adapted for use as plastered in blackboard trim, with or without the cap moulding. Chalk trough, dust screen and map hooks are included, these being applied after plastering to avoid possible damage. Miters welded at factory, and no nails or screws are shown, except on stops which are cut on job and held in place with oval head screws, so that they may be easily removed and broken blackboard replaced.

On the right above, we have shown our trim No. 65 with No. 656 map rail, to be set up after plastering. Chalk trough and dust screen included, also map hooks as required. Oval head or concealed screws as preferred. We recommend 20-gauge trim and 22-gauge chalk trough and dust screen for either type of installation.

Window Trim

The illustration at left shows upper right-hand corner of our No. 41 flush window trim with cove corner fittings, designed for erection after rough wall is built and before plastering. Where lining tile is used, we recommend erection of trim before this tile is placed, and furnish special anchors, which are built into joints of tile, for tying trim to wall.

With this construction, space in back of trim is filled with mortar, not only at stools, but at heads and jambs as well, making a more solid, airtight and sanitary construction as well as saving cost of wood furring, which is used in many cases.

Jamb sections Nos. 42, 43, and 44 may be used with welded mitered corners, or with cove fittings using same section for stools, or stools Nos. 32 and 33 may be used. These mouldings give a definite stopping point when different colors are used for painting window reveal and plaster wall.

Stool No. 33 is made 16-gauge or lighter as required. Other stools shown can be furnished in any gauge, size or shape desired. We recommend not lighter than 16-gauge for any stools, and find that 11-gauge is desirable where exposed to rough usage. Stools should be set in soft grout where possible.

REYNOLDS CORPORATION

19 Rector Street
NEW YORK, N. Y.

OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES

For Metallation or Insulation, Air Conditioning Units (Gas and Oil) and Prefabricated Ducts for heating systems, see File Index

ECOD LATH FOR PLASTER BASE

Description of Ecod Products

Reynolds Ecod (Welded Wire) Fabric, for plaster, stucco, brick or stone veneer, is made with three types of paper backing—*plain kraft, flameproof and plain asphalt felt.* All three types are available in galvanized or copper-bearing black steel.

Ecod Fabric is composed of galvanized or black copper-bearing steel ribs spaced 4 in. apart, electrically welded to cross wires of cold drawn steel, spaced 1½ in. apart. The cross wires are woven through wide corrugations in kraft, flameproof or asphalt paper.

Ecod Fabric is made in sheets 48¾x31 in., and 50 sq. yds. (43 sheets) are packed in each carton; or, for tie-on work, in sheets 8 ft. 1½ in. long by 31 in. wide, 100 sq. yds. per carton.

Reynolds Plain Ecod Fabric is composed of copper-bearing steel ribs and wire woven through a waterproof duplex kraft paper.

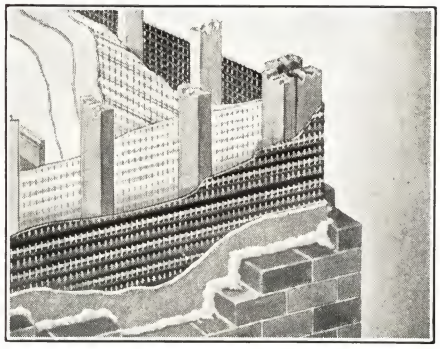
Reynolds Flameproof Ecod is formed and woven the same as the plain material, except that a flameproof paper is substituted for the duplex kraft. (N.B.: Flameproof Paper-Backed Ecod Fabric is approved by the New York City Building Department as a plaster base in fire-retarding construction.)

Reynolds Asphalt Felt Backed Ecod is formed with galvanized steel woven through an asphalt felt paper. This type of Ecod Fabric is designed as a waterproof and damp-proof base for stucco, brick or stone veneer construction.

Interior Application

Reynolds Ecod Fabric used inside the house as a plaster base should be applied by starting ceiling sheets first and bending the sheets to provide a shoe or apron down the sidewall. Although this is accepted practice, it is equally good construction to put the top row of wall sheets first, turning them on the ceiling and then proceeding with ceiling application. Lath sidewalls with each sheet lapping over the one below it. In all corners, sheets should be bent at right angles to fit adjoining walls.

Exterior Application



Reynolds Ecod Fabric should be applied on exterior sidewalls in such a way that each sheet laps over sheet below it along the horizontal edge. It should be applied in staggered design so that all vertical joints are broken. The sheets are applied by starting at the bottom of the wall and working up, as with shingles and siding.

General

Sheets of Reynolds Ecod Fabric are designed to span three spaces where studs or joists are spaced on 16-in. centers. The fabric should be applied with the steel rib exposed to receive the finishing coats. Vertical joints should be broken by applying the sheets in staggered fashion.

For Tie-on Work—Reynolds Ecod Fabric should be tied with 18-gauge galvanized annealed tie wire, making ties at each rib. Where solid web joists are used or joist spacing exceeds 16 in. on center, Reynolds Fabric should be tied to pencil or channel runners attached to the joists and spaced 16 in. on center.

When using Reynolds Fabric on ceilings suspended from flat slabs, arches or concrete joists, it should be attached to pencil rods or furring channels spaced 16 in. on center with 18-gauge galvanized annealed tie wire. Method of suspending framework, size of hangers, furring channels or rods should conform to standard practice and specifications.

Nailing and Lapping—Use 4d blued wire nails, driving nails straight through the steel rib wherever it crosses a stud or post. Do not turn nail over or flatten rib in nailing, but drive nail so head is flush with top of rib. Do not drive the nail home.

Horizontal laps of Reynolds Fabric should not be lapped more than ¼ in. Vertical laps should be not more than ¾ in. Where vertical lap or lap over stud or joist occurs, ribs of the two sheets should be placed directly together so that one nail can be driven through both ribs to form a continuous rib reinforcement.

Bending and Cutting—Reynolds Ecod Fabric is easily bent by pressing sheet along the line where a bend is desired. Inside and outside bends are made in the same way. Reynolds Ecod Fabric may be cut with ordinary tinner's snips. Odd shapes and spaces should be measured accurately before cutting and usual allowances made for laps.

Grounds and Plastering—Grounds for Ecod Fabric should be not less than ⅞ to ¾ in. thick for best work.

To afford one hour fire-rating, interior surfaces of all walls must be plastered full ¾ in. thickness with first-class gypsum plaster. Patent plasters should be applied strictly in accordance with the manufacturer's directions.

Where to Buy—Reynolds Ecod Fabric is stocked for quick delivery by leading lumber and building supply dealers throughout the United States.

Ecod Fabric is furnished in sheets for easy handling. It is readily cut with ordinary tinner snips.

Ecod Fabric is firmly nailed through steel ribs wherever they cross structural members. Where Ecod laps occur, one nail is driven through the ribs of both sheets to form a continuous rib reinforcement.

The kraft paper backing of Ecod Fabric forces mortar around ribs and wires, forming perfect plaster locks without plaster waste.

SIMPLON PRODUCTS CORPORATION

551 Fifth Avenue, NEW YORK, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

THE SIMP-L-ON FURRING SYSTEM

(Patented United States and Canada—Other Patents Pending)

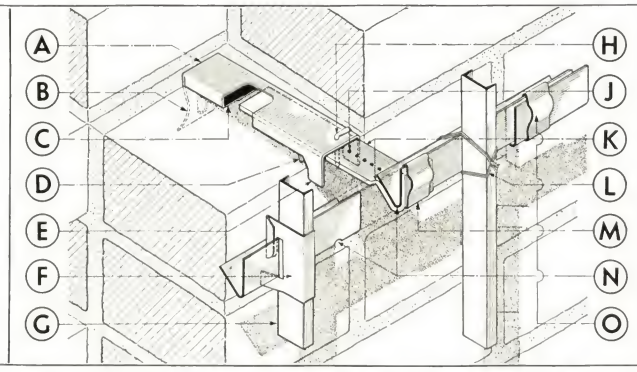
Simp-L-On is a system of steel wall furring for any type of new masonry wall construction. It is a quality product made of galvanized copper-bearing steel. It is competitive, because Simp-L-On materials form only a small but basic part of the complete furring and lathing. Architects can merely specify Simp-L-On by name with positive assurance of satisfactory results.

The object of furring is to provide an air space and consequently there should be no direct contact between finished wall materials and the masonry wall. The use of Simp-L-On guarantees this result and assures the economical use of better materials as well as an absolutely true and plumb finished wall surface. The adjustable bracket permits adjustment to within 1/8 in. Heavier brackets in any length fit the same shield for any depth of furring.

Tested and used by many of the leading architects throughout the United States, including the U. S. Treasury Department, Simp-L-On has solved one of the most important and difficult problems in building construction.

The isometric drawing illustrated shows in detail the various parts of the system and reasons therefor.

A—22-gauge galvanized metal shield built into brickwork
B—Spring flange, clamping shield to brick
C—Shield entirely enclosed to prevent clogging by mortar
D—Lug under front of shield provides pitch and prevents water flowing toward plaster
E—Projecting hood—provides alignment of shields in relation to face of masonry, prevents moisture on face of wall reaching Bracket "K" and prevents mortar droppings clogging opening
F—Simp-L-On channel clip for securing channels to horizontal member



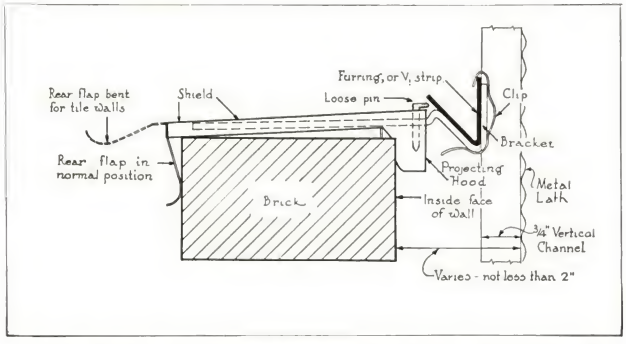
G—Vertical channels (spaced as desired) to receive metal lath
H—Removable pin for bracket adjustment
J—Holes for adjustment—¼ in. on centers
K—Adjustable Bracket made in any length desired
L—Ordinary method (wiring) of securing vertical channels
M—Clip securing horizontal member to brackets
N—Horizontal furring member with weep holes
O—Method of overlapping strips and clipping together to form continuous horizontal member

Above Shows Installation of Simp-L-On in Brick Wall Ready to Receive Lath

Detailed Specifications

A detailed specification of installation of Simp-L-On Furring will be sent on request either for general use or for Governmental agencies and PWA projects.

Detailed specifications to cover the use of the Simp-L-On Type "B" shield for reinforced construction will also be sent on request.



Cross Section Through a Brick Showing Proper Installation of Type "A" Shield

For All Types of Masonry Construction

Type "A" shield is designed for brick, tile, rubble stone, and concrete block construction. Type "B" shield should be used for reinforced concrete. All Simp-L-On furring members are galvanized and made of copper-bearing steel with the exception of the spring clips and securing pins which are cadmium plated. The illustration shows the furring completely erected ready for lath.

Short Specification

Under Heading of Mason Work—This contractor shall furnish and install in strict accordance with directions of manfacturer, 22-gauge galvanized metal shields Type ("A" for brick, tile or stone masonry, "B" for concrete) as manufactured by the SIMPLON PRODUCTS CORPORATION, 551 Fifth Avenue, New York, N. Y. The Mason Contractor shall use care in locating the shields accurately and, should any shields be improperly located or installed, he shall reimburse the Furring Contractor for any additional work required to provide the necessary fixed support for the furring.

Under Heading of Furring—The Furring Contractor shall furnish and erect a complete system of furring equal to the Simp-L-On System as manufactured by the SIMPLON PRODUCTS CORPORATION, 551 Fifth Avenue, New York, N. Y. This will consist of 12-gauge galvanized brackets inserted in the shields and secured to the shields with cadmium plated pins, galvanized V-strip with 1-in. legs clipped to brackets with cadmium plated spring clips and ¾-in. (or 1-in.) vertical channels spaced 16 in. (or 12 in.) fastened to V-strip by means of 22-gauge galvanized channel clips. Brackets, V-strip and channel clips to be copper-bearing steel. All to be erected in strict accordance with manufacturer's directions.

Demonstration Set

A demonstration in your office of the operation of this simple method is possible with Simp-L-On Demonstration Set which will be sent free on request.

Representative Installations

Rockefeller Center, New York, N .Y.
Federal Building, San Francisco, Calif.
U. S. Post Office, Vesey Street, New York, N. Y.
Brooklyn College, New York, N. Y.
Rockefeller Apartments, New York, N. Y.
Senior High School, Norwalk, Conn.
Williamsburg Hotel, Williamsburg, Va.
Merck & Co. Administration Building, Rahway, N. J.
Donaldson Brown Residence, Port Deposit, Md.
Holston Valley Hospital, Kingsport, Tenn.

Erected Fast—Built to Last

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LOS ANGELES, CAL., 214 No. Alameda Street
BUFFALO, N. Y., 70 Niagara Street
SAN FRANCISCO, CAL., 101 Townsend Street
PORTLAND, ORE., 1127 Northwest 16th Ave.

Product

CLINTON WIRE LATH.

For our pages on Electrically Welded Wire Fabric for concrete reinforcement, Chain Link and Iron Fences and Gates, Metal Grilles and Radiator Enclosures, see File Index.

Clinton Wire Lath

Clinton wire lath has been a recognized standard of quality for over half a century and is one of the most efficient and trustworthy lathing materials in use at the present time.

Clinton Wire Cloth Company (Wickwire Spencer Company, successor), originator of wire cloth weaving, was the first concern to engage in the manufacture of fireproof lath.

Soon after the invention of power looms for the weaving of woolens and cotton, the Clinton Wire Cloth Company perfected a form of loom for weaving wire and entered into the manufacture of their wire lath. This woven wire mesh was the first efficient form of metal fireproofing ever used. It was used for fireproofing purposes as early as 1856, and many buildings are now standing which were fireproofed with this material at that time.

Wire Lath Has Great Strength—A drawn steel wire is, in the matter of strength and general quality of material, a superior product.

The wire, which is made by being drawn through a die, is, during its manufacture, subjected to a high tensile stress. This drawing and working of the material renders the wire a fibrous material of uniform quality, strong and reliable.

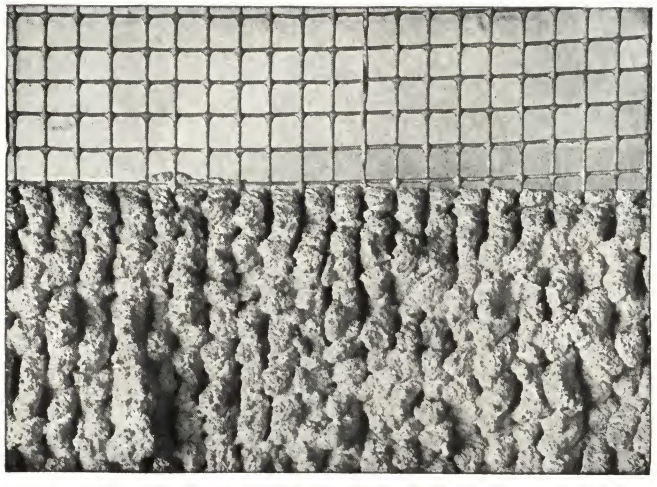
Perfect Key—The primary function of any lathing material is to serve as a foundation to grip and hold mortar. It is the key or the clinch of the backplaster which actually determines the efficiency of the plastered surface.

V-stiffeners—In cases where special rigidity is desired or where furring strips are widely separated, Clinton lath may be provided with V-stiffeners. These are rigid V-shaped ribs of No. 24 gauge steel securely fastened to the wires and extending across the fabric at intervals of 8 in.

In addition to giving additional stiffness, these V-stiffeners also afford an offset of ⅞ in. from the supports to which the lath is attached.

Stock Grades and Sizes of Clinton Wire Lath

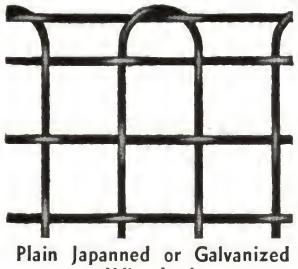
Mesh and Gauge—All stock grades of Clinton wire lath are woven from No. 18 to No. 21 Washburn & Moen gauge wire with 2 and 2½ meshes per lineal inch in each direction.



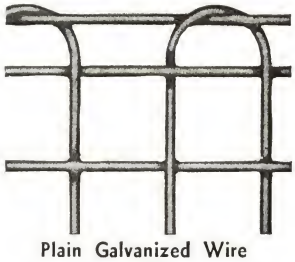
Key of Clinton Wire Lath

New York Telephone Building, Barclay and Vesey Streets, New York, N. Y.

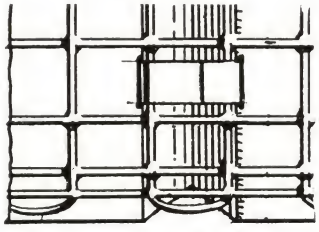
MCKENZIE, VOORHEES & GMELIN, Architects
WILLIAMSON & ADAMS, Lathing Contractors



Plain Japanned or Galvanized Wire Lath
2½x2½ mesh



Plain Galvanized Wire Lath
2x2 mesh



Stiffened Galvanized Wire Lath
2½x2½ mesh

Japanned Lath—All sizes of Clinton lath, either plain or stiffened, may be obtained either japanned or galvanized.

Galvanized-after-woven Lath—Clinton lath, either plain or stiffened, is galvanized after weaving.

Size of Rolls—Clinton plain V-stiffened lath, either japanned or galvanized-after-woven, is furnished in rolls 150 ft. long x 36 in. wide.

SHIPPING WEIGHTS AND DIMENSIONS ONE ROLL CLINTON WIRE LATH*

Mesh §	Gauge	Plain Lath				Stiffened Lath			
		Painted		Galvanized		Painted		Galvanized	
		Wgt., lb.	Dia., in.	Wgt., lb.	Dia., in.	Wgt., lb.	Dia., in.	Wgt., lb.	Dia., in.
2	18	120	13	163	14	170	19	223	21
2	19	91	13	128	13	142	18	188	20
2	20	68	12	100	12	116	16	160	20
2½	18	147	13	203	14	203	19	263	21
2½	19	114	13	160	14	165	18	220	20
2½	20	85	13	126	13	135	16	186	20
2½	21	70	13	110	13	120	15	170	19
2½	22			90	13				

*All lath 36 in. wide; i.e., height of all rolls 36 in.
§Meshes per lineal inch in each direction.

Specifications for Interior Furring and Lathing

Furnished upon request.

THE CONSOLIDATED EXPANDED METAL COMPANIES

WHEELING, W. VA.

SALES OFFICES AND WAREHOUSES

ATLANTA, GA. BOSTON, MASS. BUFFALO, N. Y. CHICAGO, ILL. CINCINNATI, OHIO CLEVELAND, OHIO HOUSTON, TEX. NEW YORK, N. Y. PHILADELPHIA, PA. PITTSBURGH, PA.

For Other Steelcrete Pages see File Index

STEELCRETE BAR-Z-PARTITIONS

Bar-Z-Partitions are constructed of 16-gauge Bar-Z-Studs of truss-like design, to which Bar-X, the reinforced metal lath, is applied on both sides. When this combination is plastered, a hollow metal lath partition of extreme rigidity and sound-resisting properties results.

This simplified fire-safe partition is designed strictly to accordance with engineering practice to meet the modern demand for steel frame construction at low cost. Bar-Z-Partitions have been tested by the Bureau of Standards and given the one-hour fire rating.

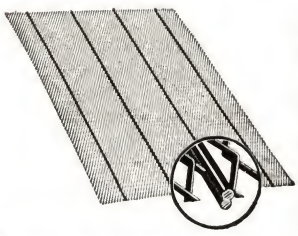
Ease of Construction

The most striking feature of the Bar-Z-Partitions is the simplicity of parts and method of assembling. The small number and light weight of the individual units used in Bar-Z-Partitions introduce exceptional economy in partition construction, and insure a uniform standard of workmanship. All the necessary material to erect a partition 20 ft. long by 10 ft. in height can be carried by one man. Bar-Z-Studs are available in 2, 3¼, 4 and 6-in. widths, giving plastered wall thicknesses 3¼, 4½, 5¼, 7¼ in., respectively.

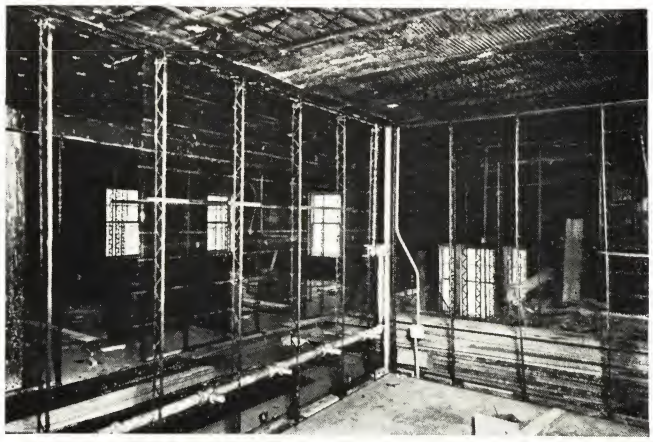
Bar-Z-Shoes permit an adjustment in the height of the finished partition.

Bar-Z-Studs cannot split, swell or warp. When metal lath is applied over these studs an ideal base of reinforced plaster is obtained.

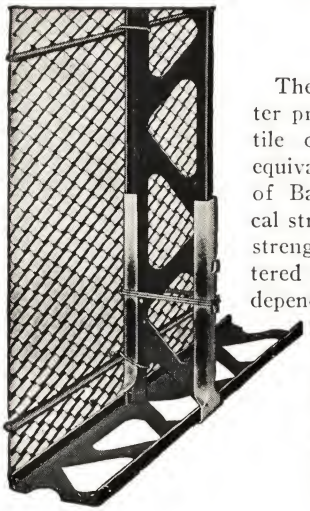
Bar-X-Lath



Bar-X-Lath consists of Steelcrete Diamond Mesh Expanded Metal Lath to each sheet of which is welded four pairs of No. 11 rods, spaced on 7-in. centers. These rods reinforce and strengthen the sheet obtaining ideal rigidity. Bar-X-Lath may be used with perfect satisfaction with studs spaced 24 in. on centers.



Pipes and conduits can be run or threaded through Bar-Z-Studs. There are no chases to cut for electrical or heating work where Bar-Z-Partitions are used.



Strong and Flexible

The truss-like steel studs and plaster produce ultimate strength equal to tile or gypsum block partitions of equivalent thickness. The light weight of Bar-Z-Partitions permits economical structural design without decreased strength. Bar-Z-Partitions when plastered weigh 16 to 20 lbs. per sq. ft., depending on the thickness of plaster grounds. The flexibility of Bar-Z-Partitions permits continuous operation of all trades. After the studs are set, plumbing and electrical work can be installed. The partition is then lathed and plastered.

Ease of Alteration

Bar-Z-Partitions are self-supporting. Openings for new doors can be cut without special construction; likewise, where old openings are to be closed Bar-Z-Shoes and studs can be attached to the existing construction and the opening lathed and plastered.

Bar-Z-Partition materials do not require large storage spaces, or elevators for handling materials.

THE KELLEY ISLAND LIME & TRANSPORT CO.

World's Largest Producer of Lime and Limestone Products

GENERAL OFFICES

Leader Building, CLEVELAND, OHIO

PLANTS

WHITE ROCK, OHIO
KELLEYS ISLAND, OHIO
GIBSONBURG, OHIO
HUNTINGTON, IND.
MARTINSBURG, W. VA.
MARBLEHEAD, OHIO
ROCKPORT, MICH.
TIFFIN, OHIO
BUFFALO, N. Y.

Products

TIGER FINISH HYDRATED LIME.
TIGER MASONS HYDRATED LIME.
TIGER FIBERED LIME.
LUMP LIME.
PEBBLE LIME.
GROUND LIME.

TRADE MARK

The Company

The Kelley Island Lime & Transport Co. is the largest producer in the world of lime and limestone products. The Company is in a position to furnish any kind of lime or limestone. The general offices are at 1122 Leader Building, Cleveland, Ohio, where all correspondence should be addressed.

TIGER FINISH is packed in white bags easily identified on the job. Specify and insist upon "WYTE BAG TIGER FINISH" being used.

Tiger Finish

Tiger Finish Hydrated Lime is used to produce:
(a) Smooth White Coat Finish
(b) Sand Finish
(c) Textured Finishes

The beauty and durability of each one of these is facilitated by the use of Tiger Finish which finds general acceptance by building material dealers and plasterers.

Leading architects throughout the country gladly specify Tiger Finish because they feel confident that their clients will get the highest quality lime that the market affords.

Just a word about the way Tiger is made. First of all comes the uniformity of the limestone deposit. To the high quality of the raw material is added a scientific process of manufacture in the hands of trained operatives closely supervised by a staff of competent chemists. Constant inspection is maintained. In brief, no effort is spared to make Tiger Finish the very best hydrate that can be produced.

Tiger Fibered Lime

This product, recently added to our line of building limes, provides a way to secure a completely Tiger plastered job. Tiger Fibered Lime for base coats (scratch and brown) is made with the same care and consequently is the same high quality product as Tiger Finish.

Tiger Masons

This is a hydrated lime for lime-sand and lime-cement-sand mortars. It is accepted by mason contractors as the standard masons hydrated lime.

Quicklimes

We manufacture old-fashioned quick limes: lump—pebble—ground. These when properly slaked form a rich, fat putty for use in sand-lime and sand-lime-cement mortars.

Efflorescence

This occurs when a masonry wall is not watertight. The most practical and economical way to secure watertightness is to make sure that the mortar has a high lime content. We suggest a 2:1:9 mortar. This means two parts lime putty (made from hydrated lime or quick lime); one part portland cement; nine parts of well graded clean mortar sand—all by volume. This mix would work out by weight as follows; hydrated lime 90 lbs. or quick lime 54 lbs.; portland cement 94 lbs.; sand 900 lbs. In actual field work when using hydrated lime it has been found very practical to use two 50-lb. sacks of hydrated lime, one standard weight sack of portland cement and nine cubic feet of sand. If this practice is followed it will eliminate the necessity of weighing materials on the job.

For Concrete Work

Use ten per cent of Tiger Finish or Tiger Masons by weight of portland cement. This makes for watertightness and enhances the appearance. Lime is an addition; it does not replace any ingredient.

Exterior Stucco

Tiger Finish Hydrated Lime makes for plasticity in application and watertightness in service. It operates to lessen hair cracking. Employ 20% of Tiger Finish by weight of portland cement used.

Specifications

Please turn to the specifications of the Finishing Lime Association of Ohio given in this section. These specifications show how Tiger Finish can be employed in plastering.

Co-operative Service

Our Architectural Service and Information Department will be glad to discuss with architects, contractors and dealers any problem arising in connection with the use of lime.

THE FINISHING LIME ASSOCIATION OF OHIO

HEADQUARTERS OFFICE
601-2-3 Home Bank Building, TOLEDO, OHIO

MEMBERS

THE KELLEY ISLAND LIME & TRANSPORT CO.
NATIONAL MORTAR & SUPPLY CO.
THE NATIONAL LIME & STONE CO.
THE NATIONAL GYPSUM CO.
THE OHIO HYDRATE & SUPPLY CO.
THE WOODVILLE LIME PRODUCTS CO.
THE GIBSONBURG LIME PRODUCTS CO.
THE STANDARD LIME & STONE CO.

SPECIFICATIONS FOR INTERIOR PLASTER, USING FINISHING HYDRATED LIME

For the purpose of aiding you in obtaining a perfect, everlasting job of plaster and aiding in the solution of your plastering problems, we are submitting these specifications on the use of Finishing Hydrated Lime. These specifications are based on average conditions and will serve as a guide in carrying out your work. The proportions of these specifications are based on the Finishing Limes of Ohio, which have physical characteristics peculiar to limestone found only in a small area in northwestern Ohio.

Materials

Finishing Hydrated Lime—All lime for finish coats shall be Dolomitic Finishing Hydrated Lime meeting the requirements of the American Society for Testing Materials, and THE FINISHING LIME ASSOCIATION OF OHIO, delivered at the job in original packages.

All lime for base coats shall be a mixture of finishing hydrated lime, hair and/or fiber, mill mixed and delivered on the job in the original packages.

Sand—(a) Sand for scratch and brown coats shall meet the requirements of the tentative specifications for sand for lime plaster of the American Society for Testing Materials.

(b) Sand for sand finish shall be a clean, dry screened sand 100% passing a No. 10 mesh screen, unless otherwise specified for specific finishes.

(c) Colored screenings and marble dust may be used to obtain color shades.

Gauging Materials—(a) Plaster of paris shall be clean, fresh and fully calcined, meeting the specifications of the American Society for Testing Materials.

(b) When Keene's cement is used it shall be a standard brand meeting the specifications of the American Society for Testing Materials.

(c) When portland cement is used it shall be a standard brand meeting the specifications of the American Society for Testing Materials and the Portland Cement Association.

Hair—(a) Hair shall be long washed goat or cattle hair free from foreign matter.

(b) Vegetable fibre free from tannin may be used and shall be long, clean, and well washed out.

Water—Water shall be clean and fit for domestic consumption.

Metal Lath—All expanded and fabricated lath shall be of an approved brand, applied in accordance with recommendations of the manufacturers.

Wood Lath—Wood lath shall be No. 1 White Pine or equal and should be as damp as practicable when mortar is applied. Courses should be broken every eighth course, and all lath laid horizontally and in one direction on ceilings. They shall be nailed securely with 3d nails to each support, and shall cross and have butt joints over a support. Lath shall be spaced ⅜ in. apart. Provide and securely place metal corner beads and metal lath strips in all exterior and interior angles.

Ground Work—(a) Grounds shall be placed and secured prior to the application of plaster. Wood lath and metal lath shall have ¾-in. or ⅞-in. grounds. Solid backings shall have ⅝-in. grounds.

Plastering on Concrete Surfaces

Base Coats (Putty Mix)

Ceilings—*Proportions:* Stiff putty, 1 part by volume; fine plaster sand, 2½ parts by volume.

Prepare ceiling by brushing or washing free from scale dust, dirt, oil, etc., and then slush down with neat portland cement as a primer or by hacking and roughing surface prepare bond to receive plaster. When this is set, apply coat as thin as possible. (If plain surface is required, it should be obtained through good formwork. Do not attempt to fill up uneven places with plaster.) Trowel to finish or texture desired. If white coat is desired, add finely screened sand to regular white coat.

Walls—⅝-in. grounds. *Proportions:* Stiff putty, 1 part by volume; plaster sand, 3 parts by volume.

Brush or wash surface free from all dirt scale, or foreign matter, and then slush down with neat cement, or by hacking and roughing surface prepare bond to receive plaster. When this is dry apply 1 coat of this mortar and by adding 1 more part of sand, apply a second coat, and bring out to grounds. Use rod and darby to bring to even surface. When firm but not dry, rub evenly with float to remove and prevent shrinkage cracks, and prepare surface to receive finish coat. When thoroughly dry apply finish coat.

Note: All interior surfaces of concrete basement walls below ground level should be furred and lathed before plastering.

Note: For first class work we recommend furring and lathing over concrete surfaces.

Base Coats Fibered (Dry Mix)

Ceilings—*Proportions:* Finishing Hydrated Lime, 2 sacks, 100 lb.; fine plastering sand, 300 lb.

Prepare ceiling by brushing or washing free from scale dust, dirt, oil, etc., and then slush down with neat portland cement as a primer, or by hacking and roughing surface prepare bond to receive plaster. When this is set, apply coat as thin as possible. (If plain surface is required, it should be obtained through good formwork. Do not attempt to fill up uneven places with plaster.)

Trowel to finish or texture desired. If white coat is desired add finely screened sand to regular white coat.

Walls—⅝-in. grounds. *Proportions:* Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plaster sand, 300 lb.

Brush or wash surface free from all dirt scale, or foreign matter, and then slush down with neat cement. When this is dry apply 1 coat of this mortar and by adding 1 more part of sand, a second coat, and bring out to grounds. Use rod and darby to bring to even surface.

When firm but not dry, rub evenly with float to remove and prevent shrinkage cracks, and prepare surface to receive finish coat. When thoroughly dry apply finish coat.

Note: All interior surface of concrete basement walls below ground level should be furred and lathed before plastering.

Three-coat Work on Metal Lath

Base Coats (Dry Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime and sand mixed in the following proportions:

Proportions—Scratch coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 200 lb.

Brown coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 250 lb.

Application—(a) Plastering shall be to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure a good clinch and key.

(c) As soon as this coat has become firm but not dry,

scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When this coat has become dry apply brown coat and bring surface out to grounds.

Rod and darby to true surface, and when this coat is firm, but not dry, rub evenly with float to eliminate and prevent shrinkage cracks and to prepare surface to receive finish coat.

Gauging—(a) If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

Base Coats (Putty Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime paste or putty, which has been allowed to age either neat or sanded for at least 24 hours, in the following proportions:

Proportions—Scratch coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 3 part by volume.

Brown coat shall be composed of: Stiff putty, 1 part by volume; plastering sand dry, 4 part by volume; hair or fibre, 3 lb. per cu. yd. mortar.

Application—(a) Plastering shall be to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure clinch and key.

(c) As soon as this coat has become firm but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When this coat has become dry apply brown coat, and bring surface out to grounds. Rod and darby to true surface and when this coat is firm but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

Gauging—(a) If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

Three-coat Work on Wood Lath

Scratch or Base Coats (Dry Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime and sand mixed in the following proportions:

Proportions—Scratch coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 200 lb.

Brown coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 250 lb.

Application—(a) Plastering shall be to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure good clinch and key.

(c) As soon as this coat has become firm but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When this coat has become dry apply brown coat, and bring surface out to grounds. Rod and darby to true surface and when this coat is firm but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

Gauging—(a) If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

Base Coats (Putty Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime, paste or putty, which has been allowed to age either neat or sanded for at least 24 hours, in the following proportions:

Proportions—Scratch coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 3 part by volume. Brown coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 4 part by volume.

Application—(a) Plastering shall be to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure good clinch and key.

(c) As soon as this coat has become firm but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When this coat has become dry apply brown coat, and bring surfaces out to grounds. Rod and darby to true surface and when this coat is firm but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

Gauging—(a) If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

Two-coat Work on Brick, Tile, Gypsum Block, etc. (Doubled-up Work)

Base Coats (Dry Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime and sand, mixed in the following proportions:

Proportions—Scratch coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 225 lb.

Application—(a) Plastering shall be to ⅝-in. grounds.

(b) All surfaces of tile, etc., shall be free from oil, dirt, dust or other foreign matter, and should be wet down before applying plaster.

(c) Apply a coat of this mortar with sufficient pressure to insure bond, and double back with the same mortar, bringing the coat out to grounds; rod and darby to true even surface.

(d) When surface is firm, but not dry, rub evenly with float to remove and prevent shrinkage cracks, and to prepare surface to receive finish coat.

(e) When plaster is thoroughly dry apply finish coat.

Base Coats (Putty Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime, paste or putty, which has been allowed to age, either neat or sanded for at least 24 hours, in the following proportions:

Proportions—Scratch coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 3½ parts by volume.

Application—(a) Plastering shall be to ⅝-in. grounds.

(b) All surfaces of tile, etc., shall be free from oil, dirt, dust or other foreign matter, and should be wet down before applying plaster.

(c) Apply a coat of this mortar with sufficient pressure to insure bond, and double back with the same mortar, bringing the coat out to grounds; rod and darby to true even surface.

(d) When surface is firm, but not dry, rub evenly with float to remove and prevent shrinkage cracks, and to prepare surface to receive finish coat.

(e) When plaster is thoroughly dry apply finish coat.

Finish Coats

Putty made from Finishing Hydrated Lime shall be soaked 24 hours. This is done by sifting Finishing Hydrated Lime into an equal part by volume of clear water.

White Smooth Finish—Thoroughly mix gauging and Finishing Hydrated Lime putty and apply evenly. Trowel to eliminate all checks, chip cracks and uneven points until a true and even surface is obtained.

Proportion—Finishing Hydrated Lime, 4 sacks, 200 lb.; plaster of paris, 50 lb.

Textured White Finish—Thoroughly mix gauging and Finishing Hydrated Lime putty and apply a very thin coat completely covering the brown coat. Follow this with heavier coat to form texture desired.

Proportions—Finishing Hydrated Lime, 3 sacks, 150 lb.; plaster of paris, 50 lb.

Sand Finish—Mix Finishing Hydrated Lime and sand dry and screen through No. 10 screen unless specified for specific finishes, and add water and mix to proper consistency.

Apply a thin coat to all mortar surfaces, and double back with same mixture and float to true plane surface.

Proportions—Finishing Hydrated Limes, 2 sacks, 100 lb.; plastering sand, 300 lb.

Keene's cement, portland cement or highly retarded gypsum may be added to sand finish as a hardener in proportions of 10% to 30% of the entire mixture.

Texture Finish—Finish in same manner as sand finish, except second coat is applied heavier, and texture desired worked in with tools or hands.

NATIONAL MORTAR & SUPPLY COMPANY

Manufacturers of Lime and Limestone Products

GENERAL OFFICES
1520 Grant Building, PITTSBURGH, PA.

PLANTS: GIBSONBURG AND COLD SPRINGS, OHIO

DISTRICT SALES AND SERVICE

CHICAGO, ILL., 43 E. Ohio Street
COLUMBUS, OHIO, P. O. Box 722
DETROIT, MICH., 325 Merton Road
PHILADELPHIA, PA., 236 East Butler Street, Ambler, Pa.
ROCHESTER, N. Y., 167 Hillendale Street
SPRINGFIELD, OHIO, P. O. Box 875
TOLEDO, OHIO, 2030 Central Grove Avenue
WASHINGTON, D. C., 1901 K Street, N. W.

EASTERN REPRESENTATIVES: The Abbey Co., Inc.
NEW YORK, N. Y., 101 Park Avenue
EAST ORANGE, N. J., 8 Brick Church Plaza

Charter Member of the Finishing Lime Association of Ohio
Member of National Lime Association

Facilities

Two modern plants located at Gibsonburg, Ohio, with 35 vertical gas-fired kilns. Duplication of all processes insures uninterrupted production. Quarry area over 20 acres, average depth 40 ft.

For 30 years rock analyses have shown absolutely no variation in chemical content. Reputation of Banner Lime is built upon unusual rock deposit, plus modern processing. This latter includes mechanical sizing of kiln stone and gas-fired kilns with absolute heat regulation for uniform burning; continuous process hydration (instead of batch hydration) for uniformity; air separation (instead of screening and grinding) for purity. Daily capacity 350 tons.

Banner
(Reg. U. S. Pat. Off.)

Availability

Building material dealers throughout the United States carry stocks of Banner Finishing Lime at all times for delivery in any wanted quantities. Consult local dealers for prices, or communicate direct with any office listed above.

Let us have one of our representatives call to show you the kind of jobs architects have specified and had plastered with base coats of Banner Fibered Lime. You will also be interested in the comments of the architects and contractors who executed these jobs.

We will be glad to put you in touch with reliable plastering contractors qualified to execute dependable lime plastering at no higher cost than hardwall work.

BANNER FINISHING LIME—HYDRATED; BANNER BASE COAT LIME—FIBERED SUPERIOR HYDRATED LIME

Banner Finishing Lime—Hydrated

Famous Ohio high magnesium (dolomitic) white lime for hard, smooth, white finishes and popular textured or period finishes; for complicated, artistic mouldings and ornamental work, precast or run in place. A favorite of plasterers and contractors since 1907. Its large yield when soaked into putty gives economy by large coverage. Has plasticity that encourages big yardage and perfect wall surfaces, angles, corners, and cornices by craftsmen.

Apply in natural pure white color for later decorating; or, integral mineral colors, carefully and thoroughly mixed, may also be used.

Packed in 50-lb. heavy double-wall paper, valve bags. Delivered to the job in original packages bearing trademarks printed in blue for easy identification.

Analysis—The purity of Banner Lime is proven by the following analysis; certified by the Pittsburgh Testing Laboratory. Results were calculated on non-volatile residue.

The extra quality of Banner is indicated by the last column which gives the requirements of the American Society for Testing Materials, specification C-6-34T and United States Government Master Specification SS-L-351 (superseding 249) for finishing lime.

	Banner analysis, per cent	Requirements A.S.T.M. Spec. C-6-34T U. S. Govt. Spec. SS-L-351
Carbon dioxide	.94	Max. permitted 5.0%
Calcium and magnesium oxides	97.68	Min. required 95.0%
Sieve test:		
On 30-mesh	.004	Max. permitted 0.5%
On 200-mesh	3.32	Max. permitted 15.0%

Banner Base Coat Lime—Fibered

For lime plaster. Famous Banner Finishing Lime, mill-mixed with proper proportions of mixed fiber, comes to the job in original packages ready for addition of just sand and water. Gives the convenience demanded by modern practice together with the finest qualities of lime plaster. May be mixed and used immediately or aged to improve working qualities. If used at once, very thorough mixing is essential. Machine mixing is preferable in all cases.

Every architect knows the merits of "old-fashioned" lime plaster: durability without limitation; fire resistance; insulation against heat and cold and *sound*. Banner Lime carries at least three times its own weight of sand, so plaster made of it can economically be put on the walls with heavier grounds, thus multiplying the natural sound-deadening qualities of lime plaster.

This material allows you to handle your plastering jobs in a more flexible manner than any other plastering material obtainable. We recommend soaking of Banner Fibered Lime at least over night in order to get the best workability. Banner Lime plaster may be stored as lime putty for sanding as needed, or it may be mixed with sand at once and mortar stacked for ageing and later use. It may also be used immediately after mixing, but maximum workability and sand-carrying capacity come from lime putty that has been soaked at least over night. In the execution of large plastering contracts, machine mixing is very convenient. Dependent upon storage facilities, requirements for a whole job can be mixed at one time. Mortar may be distributed throughout the various floors of a building and mechanics' boards may be kept filled at all times.

For Every Building Purpose

Use Banner Finishing Lime also for brickwork, tile setting, stone mortar, waterproofing concrete. Quality work is more easily achieved with a quality product.

Superior Masons Lime—Hydrated

A high magnesium white mason's lime produced at Cold Springs, Ohio, in a modern 10-kiln plant with a daily capacity of 100 tons. Used for all building construction requirements, except finishing or white-coating. Extensively used by United States Government in concrete construction; in dam work under Government supervision; in public utility enterprises where specifications are stringent and rigidly enforced. Distributed by building material dealers.

TRADE-MARK

SPECIFICATIONS

Complete standard specifications are given in Sweet's Catalog File, Architectural, by the Finishing Lime Association of Ohio. As charter members of this organization we recommend the use of Banner Lime according to these specifications for standard practice, varying only as local conditions dictate. Complete standard specifications for your A.I.A. File will be cheerfully furnished upon request.

Short Specifications

A convenient short specification to insure your getting Banner Fibered Lime Base Coats and Banner Lime Finishing Coat:

Base Coat plastering, both scratch and brown coats, shall be done with Banner Base Coat Lime—Fibered, delivered at the job in original packages and prepared for use in accordance with the manufacturer's recommendations.

Finishing coats shall be done with Banner Finishing Lime—Hydrated, delivered at the job in original packages and prepared and used according to the manufacturer's recommendations.

Detailed Specifications

If you prefer to write more detailed specifications, we suggest the following:

Materials for Plastering—Banner Base Coat Lime—Fibered for scratch or base coats. Banner Base Coat Lime—Fibered for brown or leveling coats. Banner Finishing Lime—Hydrated for finishing purposes. All the foregoing materials manufactured by National Mortar & Supply Company, Pittsburgh, Pa.

Sand to be clean, sharp, plastering sand graded from fine to coarse and meeting A.S.T.M. specifications.

Gauging materials—Plaster of paris or Keenes cement shall be a standard brand, meeting the specifications of the A.S.T.M.

Water shall be clean and fit for domestic consumption.

Mortar boxes and tools shall be thoroughly cleaned before using.

If you desire putty mix method for preparing the plaster used on your job, select suitable specification following, making notation that:

Banner Base Coat Lime—Fibered is to be shaken or scattered over the surface of clear water held in clean mortar box or tank and allowed to settle and form thick paste or putty. Soak at least over night (24 hours is better) and then mix putty and sand thoroughly.

If you prefer mixing sand and lime dry, select suitable specification following, making notation that:

Lime and sand are to be thoroughly mixed dry and water added to make mortar of proper consistency. Very thorough mixing is desirable and machine mixing preferable. Time and labor used in properly mixing gives returns in the better working of the mortar in application.

Mortar may be used immediately after mixing, *or*

Mortar shall be stacked or left in mortar box properly protected and kept wet, which increases the workability of the plaster.

Proportions—

Three Coat Work on Metal Lath

Putty Mix—Proportions:
- Scratch Coat—1 part Banner Fibered Lime putty, 2 parts clean sharp sand
- Brown Coat—1 part Banner Fibered Lime putty, 3 parts clean sharp sand

Dry Mix—Proportions:
- Scratch Coat—1 sack, 50 lbs. Banner Fibered Lime, 200 lbs. clean sharp sand
- Brown Coat—1 sack, 50 lbs. Banner Fibered Lime, 250 lbs. clean sharp sand

Three Coat Work on Wood Lath

Putty Mix—Proportions:
- Scratch Coat—1 part Banner Fibered Lime putty, 2 parts clean sharp sand
- Brown Coat—1 part Banner Fibered Lime putty, 3 parts clean sharp sand

Dry Mix—Proportions:
- Scratch Coat—1 sack, 50 lbs. Banner Fibered Lime, 200 lbs. clean sharp sand
- Brown Coat—1 sack, 50 lbs. Banner Fibered Lime, 250 lbs. clean sharp sand

Application on Metal Lath or Wood Lath—Plastering shall be ⅞-in. grounds. Apply the base or scratch coat evenly and with sufficient pressure to insure good keys. As soon as this base coat has become firm, but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat. When base coat is dry, apply brown coat, bringing surface out to grounds. Rod and darby to true surface and when this coat is firm, but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

Brick, Tile, Etc.—

Two Coat Work (Doubled Up Work):

Putty Mix—Proportions:
- Base Coats—1 part Banner Fibered Lime putty, 3½ parts clean, sharp sand

Apply a coat of this mortar with sufficient pressure to insure bond and double back with same mortar bringing the coat out to ⅝-in. grounds; rod and darby to true, even surface.

Dry Mix—Proportions:
- Base Coats—1 sack, 50 lbs. Banner Fibered Lime, 300 lbs. clean sharp sand

Apply a coat of this mortar with sufficient pressure to insure bond and double back with same mortar bringing the coat out to ⅝-in. grounds; rod and darby to true, even surface.

Finishing Coats—Carefully soak Banner Finishing Lime by shaking or scattering over surface of clean, drinkable water held in mortar box or tank that does not leak. Allow to soak at least over night. Gauge putty with plaster of paris before applying.

(See complete standard specifications — including specifications for plastering on concrete surfaces—by the Finishing Lime Association of Ohio printed in this volume, same section.)

THE OHIO HYDRATE & SUPPLY COMPANY

Manufacturers of Lime and Limestone Products

GENERAL OFFICES AND PLANT

WOODVILLE, OHIO

Charter Member of the Finishing Lime Association of Ohio

DISTRICT REPRESENTATION

BOSTON, MASS., 18 Wellesley Park, Dorchester
CHARLOTTE, N. C., Mayfair Hotel
CHICAGO, ILL., 5247 Bernard Street
CINCINNATI, OHIO, 1038 Delta Avenue
DENVER, COLO., Denver National Bank Building
DETROIT, MICH., 1329 Virginia Park
ELYRIA, OHIO, 8 Plaza Apartments
MIAMI, FLA., 1750 Purdy Avenue, Miami Beach
MINNEAPOLIS, MINN., 3246 No. Humboldt Street
NEW YORK, N. Y., 500 Fifth Avenue at 42nd Street and 3830 Bronx Boulevard, Bronx
PHILADELPHIA, PA., 339 Trevor Lane, Cynwyd
PITTSBURGH, PA., 534 Overbrook Boulevard
PORTLAND, ORE., 2221 No. Albina Avenue
PROVIDENCE, R. I., 714 Industrial Trust Building
ST. LOUIS, MO., Parkedge Apartment Hotel
SYRACUSE, N. Y., 204 Milford Drive, West
WASHINGTON, D. C., 4441 47th Street, N. W.

Products

Ohio White Finishing Lime
Hawk Spread White Finishing Lime
Ohio Sanlime Sand Finish
Ohio Ritewall Hair Fibred Finishing Lime Plaster
Mastite Masonry Mortar
Ohio Masons Hydrated Lime
Ohio Outside Stucco
Ohio Quick Limes

Ohio White Finishing Lime (Hydrated)

Produced in the heart of the famous finishing lime district from pure dolomitic limestone, testing 99½% calcium and magnesium carbonate, which when flame burnt, picked, ground, hydrated and separated, results in a finished product particularly adapted for whitecoating, base coat plastering and other building purposes.

It is packed in 50-lb. heavy duplex paper bags, delivered to the job in original packages, bearing the above trade-marks.

Trade-Marks

Ohio Sanlime

As the name implies, this is a prepared white or colored sand finish, produced in white, buff, light buff, golden buff, pink and light green. It is composed of white plastic products and white dried and uniformly grained sand. Being machine mixed, it produces a colored finish of uniform texture and coloring, free from blemishes.

Directions—Use a clean, tight soaking box and use only clear, pure water. Keep tools clean. Enough water should be added in soaking to form the proper consistency. Add the water slowly so as not to separate the sand from the plastic ingredients and coloring. Allow it to soak for 12 to 48 hours; then apply in the usual manner.

Covering Capacity—From 150 to 250 yds. per ton of material.

The texture can be varied according to the artistic skill of the plasterer and tools used in finishing.

Ohio Ritewall Hair Fibred Finishing Lime Base Coat Plaster

A machine mixed, neat plaster, particularly adapted for use in scratch and brown coats on solid backing, such as brick, stone, hollow tile, gypsum block, etc. It is also an ideal base coat to be applied on wood lath and metal lath. It should not be applied over papered or painted surfaces. It has certain definite metal preserving and acoustic improving properties.

Manufacturing Facilities

The Ohio Hydrate & Supply Company plant is located one mile south of Woodville in the heart of the finishing lime district. Capacity in the production of various lime products is approximately 600 tons per working day. The capacity of the stone and processing plants is approximately 3000 tons per working day.

Ohio Mastite Masonry Mortar

A machine mixed mortar consisting of the proper proportions of portland cement and Ohio hydrated lime and a hardener to produce a tight, hard mortar joint. It is a neat material.

Directions—Mix 1 part of Mastite to 3 parts of well-graded masons sand and apply in the usual manner.

Ohio Masons Hydrated Lime

Should be used in accordance with standard practice for lime-sand and lime-cement-sand mortar. It is also a convenient product to use in lubricating and watertightening concrete mixtures. The quantity required is from 5 to 15 lbs. per bag of cement, depending on the mix.

Ohio Outside or Exterior Stucco

A neat or sanded, machine mixed product, which on account of its plasticity lends itself to be applied in various textures depending on the skill of the plasterer and tools used. It is made in the following tints or colors: white, cream, tan and light green.

It should be applied on solid backing, wood or metal lath. It is not suitable for application over painted or papered surfaces. It should be applied within 2 hours from time of mixing.

Ohio Quick Limes

Manufactured in lump and ground burnt forms and when properly slaked according to our directions form a rich, fat putty for use in lime-cement mortar, lubricating and watertightening concrete, plastering, etc.

Specifications

Please turn to the specifications of the Finishing Lime Association of Ohio given in this section. These specifications show how Ohio Lime can be employed in plastering.

Co-operative Service

Our research and sales departments will be glad to furnish any additional information required relating to the preparation and use of our products.

THE WOODVILLE LIME PRODUCTS COMPANY

Manufacturers of Blubag Brands of Lime Products for Building Uses

TOLEDO, OHIO

PLANT AND QUARRIES, WOODVILLE, OHIO
Charter Member of The Finishing Lime Association of Ohio

PRODUCTS

Blubag Brands of Finishing Hydrated Lime — White Enamel, White Lily, Gold Medal; *Blubag* Fibered Lime Plaster; *Blubag* Sand Finishes (Interior); *Blubag* Stucco Finishes (Exterior); *Blubag* Brick Cement; Prestone Superlime Plaster; Ace High Mason's Lime; Weatherite Waterproofing Mason's Lime; Lump Lime; Rex Cement Products Improver; Cold Water Paints: Newkote, Interior; Stucco Seal, Exterior.

QUALITY OF GREATEST IMPORTANCE

Eighty per cent of the interior of a building visible to the eye is wall. Quality of lime used is, therefore, of greatest importance and should receive architect's most careful consideration.

Blubag Lime Products are guaranteed to meet the standard of specifications of the American Society for Testing Materials as well as those of the Bureau of Standards.

LABORATORY TESTS INSURE UNIFORM QUALITY

Nothing is taken for granted in the production of *Blubag* lime products. Every process of manufacture is under the supervision of seasoned and experienced men and skilled chemists.

A complete and modern research and testing laboratory is an important factor in making products of the highest quality that may be obtained anywhere at any price.

BLUBAG FINISHING HYDRATED LIME

For plain and textured wall finishes. Made in three brands: White Enamel, White Lily, Gold Medal, all of equal quality and all packed in the distinctive blue package labeled *"Blubag."* Six and one-quarter gallons of water to each bag of lime produces a uniform putty of perfect consistency for gaging. Its characteristic whiteness is always reflected in the finished job.

BLUBAG FIBERED LIME PLASTER FOR BASE COAT PLASTERING

Prepared from our finishing hydrated lime mixed with proper proportions of fiber, thoroughly distributed and ready for mixing with sand and water at the job. Can be applied to wood or metal lath, brick, gypsum tile or other masonry bases immediately after mixing. Develops excellent acoustical qualities and produces a hard, durable wall.

Twelve Specific Properties That Make Blubag Fibered Lime Plaster Outstanding—

(1) Durability.
(2) Specific sound-deadening properties.
(3) Develops high early and ultimate strength.
(4) Improves with age.
(5) Fire-resistant.
(6) Workability enables the plasterer to produce straight walls and angles.
(7) Retemperable—eliminates loss of material.
(8) Increases productivity of plasterer with less effort.
(9) Non-corrosive to metal.
(10) Maximum covering capacity.
(11) Produces even unbroken surfaces.
(12) Gives perfect base for decorations.

BLUBAG SAND FINISHES

Blubag Sand Finishes are standardized products using graded, natural colored aggregates, with standard cementitious materials, factory mixed and bagged, arriving at the job ready for the mixing water and application. They can be applied as sand float or textured finishes.

ACE HIGH MASON'S HYDRATED LIME

A product of exceeding whiteness that mixes with sand and portland cement in definite proportions for all types of masonry construction. Special table of ratios sent on request.

WEATHERITE WATERPROOFING MASON'S HYDRATED LIME

Complies with all physical and chemical specifications for mason's lime. The waterproofing qualities are developed entirely in the process of manufacture, without the use of chemicals, which produces a lime of such physical state that when used in a mortar, it develops high water-resistance and improves all other properties of masonry mortar.

HOW TO SPECIFY BLUBAG FINISHING LIME

For a complete standard form of specification refer to the pages in this catalogue of The Finishing Lime Association of Ohio.

Select the particular specification to fit your requirements and insert the brand name *"Blubag* Brands of Finishing Hydrated Lime," together with "manufactured by The Woodville Lime Products Company, Toledo, Ohio." Detailed specifications on all *Blubag* lime products will be sent to you upon request.

FACILITIES AND DISTRIBUTION

Plant and quarries are located at Woodville, Ohio, and general offices at Toledo, Ohio. Products are distributed through all principal building material dealers throughout the United States.

AMERICAN CYANAMID AND CHEMICAL CORPORATION

STRUCTURAL GYPSUM DIVISION

TELEPHONE
Circle 7-0100

EXECUTIVE OFFICES
38 Rockefeller Plaza, NEW YORK, N. Y.

SALES OFFICES IN THE PRINCIPAL EASTERN CITIES

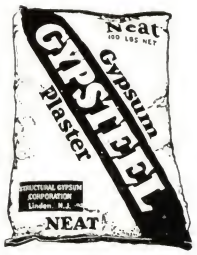
For Gypsteel Pre-cast Roofs and Floors, and Gypsteel Gypsum Partition Tile, see File Index

Products

GYPSTEEL GYPSUM PLASTERS.

Daily Delivery Service

The central location of our plant at Linden, N. J., in the New York Metropolitan Area, makes rapid and prompt deliveries to all parts of that area possible. Gypsteel Plasters are delivered by truck within fifty miles of New York, N. Y., the morning following the receipt of orders. Deliveries to points beyond are made by rail.



Full Line of Plasters

Gypsteel Gypsum Plasters are supplied for all uses—Neat, Sanded, Wood-Fibered, Gauging, Moulding, Bond Coat for application to concrete, Colored Finishing Plasters, Finishing and Mason's Hydrated Limes and Super-Tex Plastic Paint.

All Gypsteel Gypsum Plasters are shipped in strong paper bags marked with a large diagonal green stripe for easy identification.

Ask for Service Sheet No. 6 giving complete specifications and other useful information.

GYPSTEEL GYPSUM PLASTERS

Description and Advantages

The exclusive Gypsteel Process of making gypsum results in a product of great purity and uniform quality. One batch of gypsum made by our process is just the same as another, for *it does not depend for its uniformity upon the percentage of gypsum found in gypsum rock in nature,* which varies greatly. Some of the outstanding advantages of Gypsteel Gypsum Plasters are:

(1) Great Slip and Spread.
(2) Strong and Tough Walls.
(3) Uniformity in Set and Surface Hardness.
(4) Eliminates Climatic, Setting Time and Sand Complaints.

Gypsteel Neat Plaster

Requires addition of sand on the job. Most economical on large operations where a good, clean sharp sand is available. Is well fibered for scratch or brown coats over wood lath, metal lath, brick or gypsum and clay surfaces. May be supplied unfibered when desired. Mixed according to directions, one ton with sand added will cover as much surface as 3 tons of ready sanded plaster.

Specifications—Grounds should be ¾ in. for 2-coat work and ⅞ in. for 3-coat work.

Gypsteel Sanded Plaster

Ready for use with addition of water only. Clean, sharp sand assures a mortar that is smooth and easily worked. Especially recommended in localities where good sand is not available at reasonable prices.

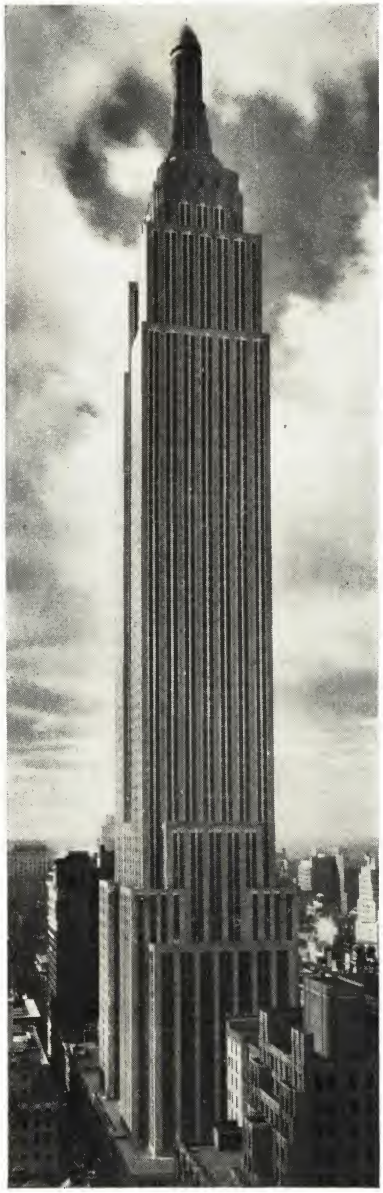
For use on wood lath, metal lath, gypsum tile, brick or clay tile.

Specifications—Grounds and lathing to be same as neat plaster.

Gypsteel Wood-Fibered Plaster

Contains finely shredded wood fiber giving the plaster toughness, flexibility and bulk. Spreads easily and is especially suitable for two coat work. Comes ready to apply with the addition of water only. If desired, equal parts of good, clean sand may be added at the job. Wood-fibered plaster is more bulky than other grades and will cover a slightly greater area.

Specifications—Grounds and lathing same as for neat plaster. Is to be used with or without sand. If sand is added at the job it will accelerate its set, consequently, the mill should be notified how the material is to be used so that proper retardation can be made.



Empire State Building, New York, N. Y.
A Gypsteel Plaster Job Throughout
Photo by Techni-Photo, New York, N. Y.

Gypsteel Bond Plaster

Especially made for application to interior concrete ceilings and walls. Gypsteel Bond insures greatest adhesion to concrete surfaces. Used with addition of water only. Walls must be clean and free from dust, oils or efflorescence. We advise cleaning concrete surfaces with a weak solution of muriatic acid, using a wire brush.

Grounds to be of sufficient thickness to bring to a true and even surface—usually ¼ in. Dries to a light gray surface, ready for application of white finish coat or it can be finished by troweling to its natural gray color.

Gypsteel Gauging Plaster

Is manufactured from selected gypsum. It is cool and smooth working and has uniform setting qualities.

For Trowel Finish—Mix approximately three parts of lime putty, by measure, with one part of dry gauging plaster; equal to two parts of dry hydrated lime and one part of dry gauging plaster, by weight. Mix thoroughly; apply in usual manner.

Gypsteel Moulding Plaster

Is an exceptionally high grade and finely ground material. Possesses cool working qualities and assures a clean sharp definition in finished cast.

Gypsteel Prepared Finishes (In Colors)

A ready prepared finish requiring only addition of water. Comes in various colors and tints. Color chart sent upon request. Permits a wide variance in decorative schemes in textured and stippled finishes of all kinds. Colors are lasting.

Specifications—Gypsteel colored finishes require only the addition of water to make them ready for application. Mix thin and in small batches as required. Base coat should be well scratched or broomed before applying finish; walls should be dry.

COVERING CAPACITY OF GYPSTEEL PLASTERS (APPROXIMATE)

Plastering base	Neat, yd. per ton	Wood-fiber, yd. per ton	Sanded, yd. per ton
Wood lath	190 Sanded 2 to 1	115 Unsanded	65
Metal lath	110 Sanded 2 to 1	90 Unsanded	40
Plaster board	200 Sanded 2 to 1	60 Unsanded	75
Gypsteel tile	200 Sanded 3 to 1	140 Sanded 1 to 1	65
Clay tile and masonry	175 Sanded 3 to 1	110 Sanded 1 to 1	50

THE MATHIESON ALKALI WORKS (INC.)

GYPSUM DIVISION

Manufacturers and Distributors

1625 Eckington Place, N. E.
WASHINGTON, D. C.

EXECUTIVE OFFICES: 60 East 42nd Street, NEW YORK, N. Y.
BRANCH OFFICE: First National Bank Building, CHARLOTTE, N. C.
MILLS AT SALTVILLE, VA., and NORTH HOLSTON, VA.

A COMPLETE LINE OF GYPSUM AND RELATED BUILDING PRODUCTS

Products

GYPSUM PLASTERS:

Southern, Cherokee, Boone and *White Top*—fibered and unfibered.

Southern and *White Top*—wood fibered.

GYPSUM WALLBOARD and LATH:

Mathieson and *Southern* brands.

GYPSUM BLOCK:

Southern brand—hollow and solid.

Also Concrete Special Bond Plaster; Pioneer Gauging Plaster, Pioneer Moulding Plaster and Keene's Cement (manufactured by Best Bros.); Metal Lath Products; Ohio Finishing Lime; Hydrated Lime.

Gypsum Plasters

MATHIESON Gypsum Plasters are made from pure gypsum rock, mined and manufactured at our North Holston, Va., mines and mills and are marketed under the above listed brands.

Our large testing laboratories assure you of A-1 quality plaster, uniform at all times and manufactured with the latest Raymond and Tube mills.

Gypsum Block

Southern brand Gypsum Block are of the highest quality, fire-resisting, heat, cold and sound-resisting. They are light-weight and the correct material for interior, non-bearing partition, beam and column covering and wall furring.

Sizes—12x30 inches; thicknesses, 2 and 3 inches solid; 3, 4, 5 and 6 inches hollow.

Gypsum Wall Board

Southern and *Mathieson* Wall Boards are finished wall materials. They are gypsum rock wall boards, light in weight and of great strength and rigidity; will not warp or shrink.

Sizes—Manufactured in 6 to 12-foot lengths; uniform thicknesses of ¼, ⅜ and ½-inch.

Gypsum Lath

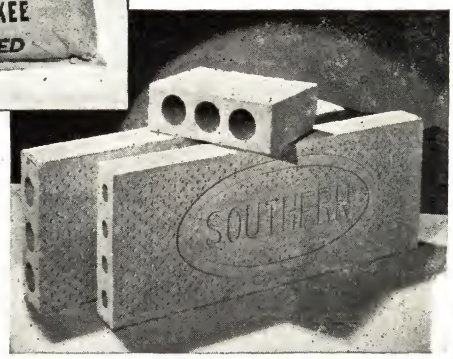
Produced in the same manner as gypsum wall board and is a perfect plaster base.

Sizes—⅜ and ½-inch thicknesses. Standard sizes are 16x32 and 16x48 inches, bundled; also 24x32 and 32x36 inches, unbundled.

Metalized Wall Board and Lath

Southern and *Mathieson* Gypsum Wall Board, metalized "aluminum foil." In all sizes.

Southern and *Mathieson* Metalized Lath, "aluminum foil"—a reflective insulation. Size—16x48x⅜ ins.



Other Products

We are in position to supply in mixed cars:

Hydrated Lime; Ohio Finishing Lime; Best Bros. White Gauging, Moulding and Casting Plasters and all grades of Keene's Cement; Metal Lath; Insulating Board; Gypsum Rock for cement manufacturers; Stucco for glass and marble manufacturers and Agricultural Gypsum.

Mathieson's Products Are Always Your Assurance of Quality

THE BEST BROS. KEENE'S CEMENT CO.

400 West Madison Street
CHICAGO, ILL.

PLANTS: MEDICINE LODGE, KAN., and SUN CITY, KAN.

BRANCH OFFICES

LOS ANGELES, CALIF. KANSAS CITY, MO. PHILADELPHIA, PA. CLEVELAND, OHIO BOSTON, MASS.

BEST BROS. KEENE'S CEMENT AND BEST BROS. "PIONEER" WHITE PLASTERS

GRADES OF KEENE'S CEMENT

Best Bros. Keene's "Regular"—This is our standard grade for ordinary plastering. It is of good color, fairly coarsely ground so as to mix readily with lime putty; has a tensile strength of over 600 lbs. per sq. in. in 7 days; an initial set of 2 hours and a final set of 4 hours.

It is used chiefly for base coat plastering; gauging in lime mortar; sand float finish; and is the principal ingredient in most of the colored interior finishes on the market today.

Best Bros. Keene's "Fine"—This has the same tensile strength and setting time as the "Regular" grade but is ground finer and is of uniform purity of color, being made from hand picked rock.

It is used for backing up artificial marble; for making caen stone; for various other effects in ornamental plastering; and, occasionally, for finish coat work.

Best Bros. Keene's "Fast Finish"—This has been manufactured specifically for a smooth finish coat, and is made to set up more quickly than our "Regular" grade when mixed with lime putty. It is designed to overcome the long interval of time that has previously been necessary between the application and the final troweling of a Keene's Cement finish. It is ground the same as the "Regular" grade; has a job set of 2 hours; and a tensile strength of over 500 lbs. per sq. in.

Best Bros. Keene's "Quickset"—This is designed specifically for castings, running mouldings, precast travertine, and similar purposes where the material is used in a neat form and has to set in the shortest time. It is finely ground; of pure white color; has an initial set of 20 minutes and a final set of 35 to 40 minutes. It has a tensile strength of 600 lbs. per sq. in.

Best Bros. Keene's "Superfine"—This grade is used only for the facing of artificial marble. It is very slow setting, having an initial set of 4 hours and a final set of 8 hours. It is pure white in color and very finely ground.

GRADES OF BEST BROS. "PIONEER" WHITE PLASTER

The various grades of white plasters are so well known and established in the industry that a detailed description of their characteristics is unnecessary. Best Bros. "Pioneer" Plasters are made from high grade gypsum rock and every care is used in their manufacture. They carry the same guarantee of uniformly high quality that applies to Best Bros. Keene's Cement.

Best Bros. "Pioneer" Gauging Plaster (Slow Set)—This is used for gauging with lime putty for smooth finish coat work.

Best Bros. "Pioneer" Gauging Plaster (Quick Set—Same grade of material as our Slow Set Gauging, without the retarder. It is a straight plaster of paris.

Best Bros. "Pioneer" Molding Plaster—A very finely ground, smooth working grade, designed specifically for running mouldings, and relief castings.

Best Bros. "Pioneer" Casting Plaster—This grade has been specially treated so as to take the minimum amount of water in attaining normal consistency. It is specifically designed for statuary and casting in closed moulds.

COMPOSITION OF BEST BROS. KEENE'S CEMENT AND PLASTERS

The various grades of Best Bros. Keene's Cement and "Pioneer" Plasters are manufactured from gypsum rock of exceptional purity. Careful, standardized attention from quarry to finished product insures uniform excellence of the various grades.

THE BEST BROS. KEENE'S CEMENT CO. is the original and largest manufacturer of Keene's Cement in this country, having been established since 1889.

Advantages—All grades of Best Bros. Keene's Cement are certified to comply with the requirements of the American Society for Testing Materials, and the U. S. Government Master Specifications.

Best Bros. Keene's Cement forms the toughest, most durable and whitest wall it is possible to obtain, and can be troweled or floated to practically any style of finish that may be desired. Non-resonant, sanitary and fire resistant. Will not corrode metal lath.

Best Bros. Keene's Cement also combines perfectly with lime.

It possesses two other qualities of great value; first, it will keep indefinitely and can be used with perfect results after being stored for years; secondly, it can be retempered. It does not "kill."

Comprehensive and Detailed Specifications are given in our A.I.A. Catalog, supplied promptly on request

SPECIFICATIONS FOR KEENE'S CEMENT PLASTERING

General—All plastering shall be done with Best Bros. Keene's Cement mixed and applied according to the specifications of the manufacturer, provided they do not conflict with the requirements herein.

Three-coat Work on Metal Lath—

(A) Scratch Coat:
10 cu. ft., stiff, aged lime putty.
200 lbs. Best Bros. Keene's Cement, "Regular."
6 lbs. hair or fiber.
1 cu. yd., clean, sharp sand.

(B) Brown Coat:
7 cu. ft., stiff, aged lime putty.
150 lbs. Best Bros. Keene's Cement, "Regular."
1 cu. yd., clean, sharp sand.

Three-coat Work on Wood Lath—

(A) Scratch Coat:
9 cu. ft., stiff, aged lime putty.
200 lbs. Best Bros. Keene's Cement, "Regular."
6 lbs. hair or fiber.
1 cu. yd., clean, sharp sand.

(B) Brown Coat:
7 cu. ft., stiff, aged lime putty.
150 lbs. Best Bros. Keene's Cement, "Regular."
1 cu. yd., clean, sharp sand.

Two-coat Work on Tile, Brick or Gypsum Block—

(A) Brown Coat:
7 cu. ft., stiff, aged lime putty.
150 lbs. Best Bros. Keene's Cement, "Regular."
1 cu. yd., clean, sharp sand.

Two-coat Work on Concrete Walls and Ceilings—

(A) Brown Coat:
9 cu. ft., stiff, aged lime putty.
200 lbs. Best Bros. Keene's Cement, "Regular."
1 cu. yd., clean, sharp sand.

Note: Wherever Best Bros. Keene's Cement "Regular" is specified above for base coats, Best Bros. "Fast Finish" Keene's Cement may be used at the option of the contractor.

Finish Coats—Any of the following finishes may be specified over the above bases:

Smooth White Finish:
100 lbs. Best Bros. Keene's Cement, "Fast Finish."
80 lbs. stiff, aged lime putty.

Sand Float Finish—
100 lbs. Best. Bros. Keene's Cement, "Regular."
165 lbs. stiff, aged lime putty.
450 lbs. clean, sharp sand.

Standard White Finish:
100 lbs. Best Bros. Keene's Cement "Fast Finish."
180 lbs. aged lime putty (6 12-qt. pails).
10 lbs. fine, white, washed sand.

First put in a power mixer approximately 24 qts. of water; then follow with the specified quantities of Best Bros. "Fast Finish" Keene's Cement, lime and sand. Mix for not less than 15 or more than 20 minutes in a power mixer.

Smooth Hard Finish—for Wainscots, etc.:
100 lbs. Best. Bros. Keene's Cement, "Regular."
25 lbs. stiff, aged lime putty.

Extra Hard Finish:
Use Best Bros. Keene's Cement "Regular" or "Fine" neat. Add no lime.

Brick and Tile Surfaces—All brick and tile surfaces shall be thoroughly broomed off and washed before the mortar is applied, and shall be damp when it is applied.

Concrete Surfaces—Where plastering is specified on concrete, it should consist of a brown coat and a finish coat.

A finish coat should not be applied directly to a concrete wall or ceiling. New concrete must not be plastered until it is dry. All dust and loose particles shall be removed from concrete surfaces by brushing well with a wire brush. The surfaces shall be washed with clean water and kept moist while the plaster is being applied. Should the concrete surfaces be oily or gummy, they must be washed with a 10% solution of muriatic acid and water (1 qt. of acid to a bucket of water), and washed out with clean water within twenty minutes after the acid solution is applied. Any cracks in the concrete shall be cut to a V-shape and filled in with neat cement and water, which must be allowed to dry thoroughly before the plaster is applied.

This coat must be laid on with a trowel or wooden float and not touched again, except to knock off the rough edges with the float. Great care must be exercised in applying the base coat to concrete. It must be laid on in one operation and not touched again, for if the coat is moved in any way the bond is broken.

Any plastered surfaces that are loose and not properly attached to the concrete after the mortar has dried out must be cut out and done over again, and sufficient area shall thus be removed to make a uniform surface without having the appearance of patchwork.

Note: If desired, an excellent mechanical bond may be secured on concrete by the use of a dash coat. For surfaces below grade, this dash should consist of a slurry of equal parts by weight of portland cement and clean, sharp washed sand. Above grade the dash should consist of equal parts of weight of Best Brothers "Fast Finish" Keene's Cement and clean, sharp, washed sand. Either mixture should be mixed to a consistency that will just pour freely. The dash coat should be kept damp until set.

SPECIFICATION FOR ARTIFICIAL MARBLE

(Scagliola)

All artificial marble shall be precast and shall be manufactured and installed according to the best practice.

Material—Best Bros. Keene's Cement "Superfine" shall be used for the facing of all artificial marble, and Best Bros. Keene's Cement "Fine" for backing up the facing to the required thickness of the slab or casting. All colors shall be high grade mineral colors; no dyes or vegetable colors shall be used.

Water—All water used in the manufacture of artificial marble shall be free from alkaline salts and, if necessary, shall be treated to eliminate these salts.

Reinforcing—Small slabs up to 2 ft. square shall be made a full 1 in. in thickness and will not require reinforcing, except for the burlap layer used in making the slab. Slabs measuring from 2 to 6 ft. in length or width shall be not less than 1¼ in. in thickness, and shall be reinforced with hot rolled channel or T-iron. Slabs over 6 ft. in length shall be not less than 1½ in. in thickness and reinforced. All reinforcement used must be painted to prevent rust stains.

Base Coat—All walls, which call for plastering underneath the artificial marble and are likely to contain alkaline salts, shall be treated with a waterproof paint and given a scratch coat of Best Bros. Keene's Cement "Regular" mixed with an equal part of a good, clean plastering sand. A brown coat shall then be applied of Best Bros. Keene's Cement "Regular" mixed with one and one-half parts of good, clean plastering sand, and shall be rodded to a true plane.

Concrete columns shall be treated with a coat of waterproof paint and shall be wrapped with metal lath. They shall then receive two coats of Best Bros. Keene's Cement and sand as provided for wall surfaces, and the brown coat shall be brought out to within ¼ in. of the finished surface.

Casting—The facing of the marble to be of Best Bros. Keene's Cement "Superfine" shall be not less than ⅛-in. thickness, and shall be backed up with Best Bros. Keene's Cement "Fine" to the thickness called for in these specifications for that size of slab.

After slabs have been allowed to set for 48 hours, they shall be stoned and filled with the same material and colors as used for the facing. They shall be filled and stoned as often as necessary until the face is free from all voids, and a hard, dense and true surface has been prepared to receive the polish.

Polishing—All artificial marble shall be allowed to cure and dry out thoroughly for a period of not less than six weeks after the final honing, before being polished. Polishing shall be done with oxalic acid and putty powder (oxide of tin). Shellac, wax or lacquer polishes will not be accepted.

ARTSTONE ROCOR CORPORATION

TELEPHONE
SUnset 6-4820

45th Street and First Avenue, Bush Terminal, BROOKLYN, N. Y.

For other Artstone Products, see File Index

ARTSTONE PORTLAND CEMENT STUCCO

"There is No Substitute for Artstone Quality"

ARTSTONE PRODUCTS

A Truly Permanent Material

ARTSTONE is a *true* portland cement stucco, one of the oldest manufactured in the United States. It is permanent, beautiful in color and texture, and forever weatherproof. Artstone is a complete material in itself. Machine-mixed, it requires only the addition of water. Its use assures a correctly formulated "weather coat," eliminating entirely hazardous job-mixing of finish coat material.

Artstone Stucco has stood the tests of time and of all climatic conditions on the exterior of thousands of important residences, churches, clubs, public buildings and industrial structures. It is used economically and effectively in the renovation and modernization of old buildings. It is scientifically waterproofed and is ideal for the interior walls and ceilings of laundries, swimming pool and shower rooms and elsewhere where moisture and condensation is a serious problem. It is widely used and highly regarded as a surfacing material in color over concrete for outdoor swimming and wading pools.

Artstone Stucco is manufactured to even higher standards than those of the American Concrete Institute. Its use is an insurance against the ravages of time and weather. Each Artstone job stands as a lasting testimonial to the architect's care in the selection of a truly permanent material.

Storm King Theatre, Cornwall, N. Y.
ERARD A. MATTHIESSEN, Architect
Artstone Stucco and Artstone Architectural Finish used

Twenty-five Colors

There is animation to Artstone, its colors never "die." Pigments are permanent and unaffected by weather, rain or the actinic rays of the sun. A wide range of 25 standard colors is available. An Artstone Color Chart will be sent upon request. Special colors are made to order and include Brownstone, Brick Red, Black, etc.

Package and Coverage

Artstone is delivered to the job in 100-lb. bags ready for use after the addition of clean water. Average coverage for most finishes is 5 square yards per bag. Spatter dash or other light textures require less material; bag rubbed or heavily torn trowel textures more.

Artstone Specifications

Base Coats—There shall be two base coats: scratch and brown. Each shall be composed of one part grey portland cement and three parts clean, sharp, well-graded sand to which may be added, if desired, not more than eight (8) pounds of hydrated lime to each sack of portland cement used.

The scratch and brown coat shall each be applied approximately ⅜ in. thick, making a total thickness of not less than ¾ in. Each base coat shall be troweled on hard and tight and, before it has set, cross-scratched to provide a mechanical key for the next coat.

Each base coat shall be dampened twice a day for two days and then permitted to dry out for at least five days and, before the next coat is applied, the wall shall be evenly wet down to cut suction. All wetting down shall be done by means of a fog spray.

Finish Coat—The finish coat shall be Artstone Stucco, manufactured by ARTSTONE ROCOR CORPORATION, Building 65, Bush Terminal, Brooklyn, N. Y., color and texture to be selected by the architect.

Nothing but clean, drinkable water shall be mixed with Artstone and the same quantity of water shall be used for each mix. The Artstone finish coat shall be applied to an average thickness of not less than ¼ in. A tight skim coat of Artstone shall first be troweled on, doubling up immediately for finish or texture.

Joinings, leaving-off and scaffold marks shall be avoided and work having such disfigurements shall not be accepted.

Curing—Starting on the day after application of the finish coat the walls shall be dampened twice a day for two days. A light fog spray shall be used for this work and the wall shall not be soaked down by means of an open hose at any time.

Note: *During cold weather caution must be exercised in the application of the base coats and Artstone. Close observation of weather conditions will insure uniformly perfect results.*

Artstone Plastic Marble for Corridor Walls

Artstone Plastic Marble is used for dadoes and corridor walls in schools and other public buildings and should be specified wherever comparatively smooth, washable and wear and abuse-resisting interior surfaces are desired. Colors and specifications are the same as for Artstone Stucco.

ARTSTONE ARCHITECTURAL FINISH

(Specified and Used for Years as "Tuckahoe" Colored Interior Plaster")

Artstone Architectural Finish is an interior finish coat plaster in color for application over sanded gypsum, lime or Keene's cement plaster base coats. It produces a beautiful, colored, self-decorating, wear-resisting surface. No paint, glaze or other wall treatment is required.

Artstone Architectural Finish has been in use for years in residences, offices, churches, schools and in public buildings of all types. It possesses a relatively high degree of acoustical efficiency, when compared to painted plaster ordinarily used. Its use is therefore desirable for all wall and ceiling surfaces where no special acoustical treatment is planned.

Color and Textural Effects

Artstone Architectural Finish can be applied in a wide variety of textural finishes, and in caenstone, travertine and other natural stone effects, jointed to stimulate masonry. Its rich plastic properties make application easy. Plasterers like to use it.

A standard range of 15 beautiful colors meets practically every need for interior decoration. A Color Chart will be sent upon request.

Package and Coverage

Artstone Architectural Finish comes in 100-lb. bags, ready for use after adding water. Coverage varies from 10 to 15 square yards per bag depending upon the texture and evenness of base. Average coverage is 12 square yards per bag.

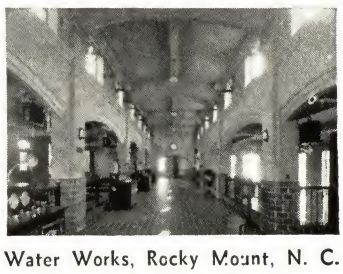
Special Artstone Architectural Finish for Casting and Run Work

Special materials for casting and for run work are manufactured to match colors selected. Time of set is adjusted for specific purpose required and the material manufactured accordingly. Specifications should call for the use of Artstone Special Interior Plaster for Casting or Ruff Work in color as selected by the architect.

Specifications (Short Form)

The finish coat of all interior plaster (unless otherwise specified) shall be Artstone Architectural Finish (Colored Interior Plaster), manufactured by ARTSTONE ROCOR CORPORATION, Building 65, Bush Terminal, Brooklyn, N. Y., color and texture to be selected by the architect.

Nothing but clean drinkable water shall be added to the material and it shall be mixed and applied in accordance with printed directions which the manufacturer will furnish to the contractor upon request.



Water Works, Rocky Mount, N. C.
WILLIAM C. OLSEN, Engineer
Artstone Stucco and Artstone Architectural Finish used

Specifications and descriptive leaflets also available for the following Artstone products: Artstone Integral and Transparent Surface Waterproofings, Audicoustone Acoustical Plasters, Rocor Colored Pre-Mixed Mortar, Rocor Colored Flooring, Artstone Textural Plastic, Roman Tex-Coat, Roman Stucco, Mothite Cedar Plaster, and "Dust-X" Cement Floor Hardener.

THE UPSON COMPANY

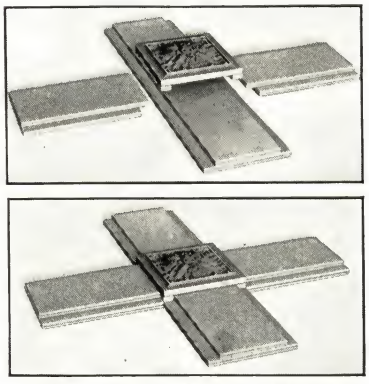
10 Upson Point
LOCKPORT, N. Y.

You can identify genuine Upson Wallboard Products by the famous blue center running through each panel edge.

Makers of:
UPSON STABILIZED BOARD
UPSON ARTWAL—Tiled and Smooth
UPSON FIBRE-TILE
UPSON DECORATIVE MOULDINGS, DUPLEX MOULDINGS AND ACCESSORIES

UPSON PRODUCTS — for Walls and Ceilings
Table of Items, Lengths, Widths, Thicknesses, Description of Features

Product	Thickness	Width	Lengths	Features and Qualities
Upson Board (one surface "pebbled"; the other side satin smooth)	3/16" 1/4" 3/8"	32" 48" 64" 48" 48"	6, 7, 8, 9, 10, 12, 14, 16 ft. 6, 7, 8, 9, 10, 12, 14, 16 ft. 6, 8, 10, 12, 16 ft.	Exceptionally tough, mar-resistant; combines lightness with strength, easily and quickly applied. Surface hard and smooth-textured ("fuzzless"); pre-sized to take paint readily and sparingly. Factory-finished in ivory color. A finished product for wall and ceiling lining. (See illus.)
Upson Artwal (tiled (4"x4") and smooth 5 colors—Black, White Springtime Green, Pastel Blue, Old Ivory)	3/16"	48"	8 ft.	A finished wall lining—tiled or smooth—with a baked enamel surface. Surface hard and tough—will not crack, craze, chip, or peel. Finish resistant to alkalis, acids, moisture, stain, and soot. Washable with soap and water. Panels are waterproofed on back. Surface of each panel protected by heavy, slip sheet.
Upson Fibre-Tile (scored in tile-like squares 4"x4", surface unfinished but pre-sized for desired finish)	scant 1/4"	48"	6, 7, 8, 9, 10, 12, 14, 16 ft.	Possessing the character and quality of Upson Board, with exception that the smooth surface is scored in 4"x4" tile-like squares. Surface is hard and smooth (fuzzless), pre-sized to take paint or enamel readily. Thoroughly waterproofed, and can be cleaned with a damp cloth.
Upson Decorative M'ld'gs (for use with Upson Artwal; same 5 colors, and in chromium)	Cap Mldg. 2" Edge Mldg. 3/4" Division Mldg. 7/8" Outside Corner 1" Inside Corner 7/8"		8 ft. 8 ft. 8 ft. 8 ft. 8 ft.	A metal-surfaced moulding, in five types, for use with Upson Artwal or Upson Board. In colors matching those of Artwal, and also in chromium. Applied with small nails furnished.
Upson Duplex Mouldings (unpainted for "relief ceiling" effects)	1/2" overall	3" 4" 5" 6" overall	12, 14, 16 ft.	Serve dual purpose of concealing joints in wallboard and providing third dimension—*relief*—in ceilings. Varying widths enable choice of ceiling design. Called "Duplex" because double in formation, bottom section being 1" wider than top section, i.e., 2" (top) on 3" (bottom), centered—3" wide, overall.
Upson Relief Ornaments (to conceal moulding intersection joints)	Four designs, sized to fit over various sized mouldings, at intersections			Serve dual purpose of concealing joints at moulding intersections, and contributing an added touch of design to the ceiling. Ornaments are moulded, and shaped on the back to build out the set back in Duplex Moulding. (See illus.)
Upson Relief Strips (for wall paneling)	1/4"	3", 4", 6"	12, 14, 16 ft.	Of regulation Upson Board, in 3 widths, for use as wall paneling to conceal wallboard joints.
Upson Wood Mouldings (for edging of wall-paneling Relief Strips)	Three designs and widths			Of wood, in 3 designs and sizes, for use as edging or finish for Upson Relief Strips employed in wall-paneling.
Upson Self-Clinching Fasteners (anchor panels securely from back)	100 fasteners per package, sufficient for applying 175 sq. ft. of board			For appling Upson Board, Upson Artwal, or Upson Fibre-Tile. Fasteners nailed to furring or other rigid surface. Prongs clinch wallboard from back of panel (see illus.) eliminating nail heads and holes in centers of panels.
Upson Cement (waterproof)	1 gal. cans; 1 or 2 cans to case 1 gallon will apply approx. 100 sq. ft.			A waterproof cement, for applying panels of Artwal to wall, and for sealing around tub in bathroom installations.



Above, view of cut-back, intersecting moulding, and ornament with lugs, being assembled. Lower, moulding and ornament assembled. No visible joints

One of many available ceiling designs in which Upson Board is applied over joists (or directly over plaster, in old construction.) Duplex mouldings conceal all wallboard joints and ornaments conceal moulding intersections

Upson invisible fasteners secure wallboard panels from the back, eliminating nail heads, nail holes, and puttying

MEMORANDA

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MEMORANDA

ANGIER CORPORATION

Manufacturers of Waterproof Building Papers

FRAMINGHAM, MASS.

BROWNSKIN—THE INSULATING BUILDING PAPER

Description—Brownskin building or sheathing paper is made of kraft paper subjected to a special creping process. It is an invaluable contribution to the *building insulation field*. Laboratory construction reports* show this recognition is warranted.

Brownskin is also the perfect backing-up material for all types of plaster and stucco work, interior and exterior. Under woven wire mesh or metal lath, its crinkled surface readily bonds with plaster, prevents droppings and saves plaster.

Special Features—***Strength***—Brownskin withstands a pull of 40 lbs. a linear inch, and resists a pull of 20 lbs. per nail without tearing. It stands up under heavy pressures—a 100-lb. blow is required to punch a hole 1½ in. in diameter. Brownskin will go on to a building intact whether handled roughly, or in a high wind, or nailed over an uneven surface. No patching should be needed.

Resiliency—Brownskin stretches 15% before rupture. It will stretch and contract to conform to the movements of the building on which it is used—due to shrinkage, warping, settling or temperature changes.

Showing Creped Texture of Brownskin

Durability—Samples of Brownskin exposed to the weather for a year showed under analysis no loss of resiliency, no loss of its moistureproofing quality, no deterioration.

Brownskin Assures Adequate Protection—***Against Moisture Penetration***—Brownskin will prevent the penetration of moisture from without into the insulation material used in or on the walls and also into the interior of the building, even under high wind pressure. After a ground glass test for more than a month, Brownskin showed not the slightest sign of moisture penetration. When punctured by nails, Brownskin clings tightly to the nail.

Against Wind Penetration—Brownskin is resilient and will not disintegrate, shrink, split or tear away from nails. Therefore it maintains maximum protection at all times against wind penetration.

Against Dust and Vermin Penetration—Brownskin's impermeability, its chemical treatment, its mechanical toughness and its non-deteriorating qualities also protect the interior of a house from the infiltration of dust and vermin. A most practical, non-metallic sheathing material for residential construction.

Brownskin Provides Adequate Insulation—***Against Normal Heat Loss***—Brownskin will not only keep cold air *out* of a house but will keep heated air *inside* of a house. Winter air leakage means higher fuel bills, drafts and discomfort. Brownskin is a practical and economical insulating material.

Against Moisture Absorption—With the development of air conditioning has come the need for protection of the insulating material against moisture absorption. Brownskin between siding and boarding prevents moisture penetration from the outside. Where further protection is necessary, a second layer, applied between studding or ceiling joists and plaster base, protects it from the inside moisture of the house.

*Tests made by Professor Voss at Massachusetts Institute of Technology.

Economy Brownskin—This is a sheet of Brownskin bonded by a bituminous compound to a sheet of smooth kraft paper. The facing side has all the non-deteriorating and resilient features of Brownskin, although the plain kraft side has not. Economy Brownskin will give adequate protection where the demands upon it are not great, as, for instance, between rough and finished wood flooring.

Brownskin Specifications—Flash windows, doors and all other exterior openings with 9″ (nine-inch) Brownskin Continuous Flashing before Brownskin Sheathing Paper is applied.

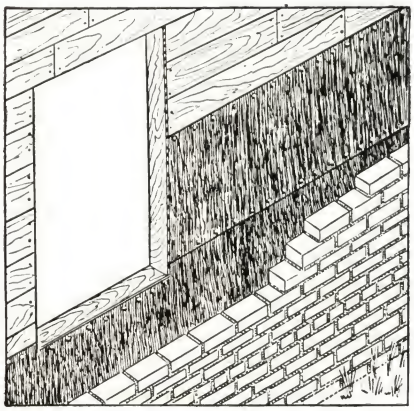
All exterior sheathing or studs (where no solid sheathing is used) shall be covered with a layer of Brownskin Sheathing Paper stretched over the entire exposed wall surface and thoroughly nailed with large head galvanized nails before any siding, indicated in the plans or elsewhere in the specifications (as siding, clapboards, shingles, stucco, brick), is applied. All weather laps shall be not less than 2″ (two inches). The Brownskin shall be carried over the studs, sills, heads and jambs of all openings, and securely nailed.

Between all rough and finished floors, the contractor shall lay a single layer of Economy Brownskin, applied with the Brownskin side down. This paper shall be securely tacked to the under floor with large head galvanized nails and shall be lapped at all seams not less than 2″ (two inches). The Economy Brownskin shall be turned up at least 2″ (two inches) under all base boards or mouldings at the intersection of all floors and walls.

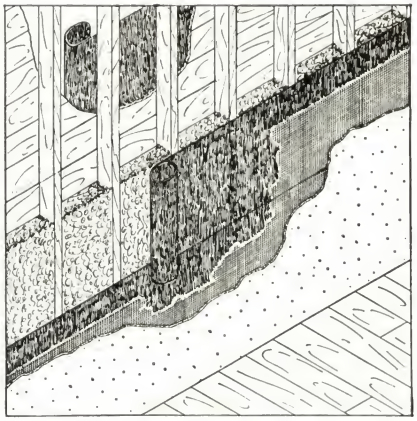
The Brownskin Building Paper (Brownskin Continuous Flashing) (The Economy Brownskin) shall be as manufactured by the ANGIER CORPORATION, Framingham, Massachusetts.

Sizes of Rolls—***Standard***—500, 1000 or 1200 sq. ft. in 36, 40 and 48-in. width. Narrower widths, on order, in any desired dimension.

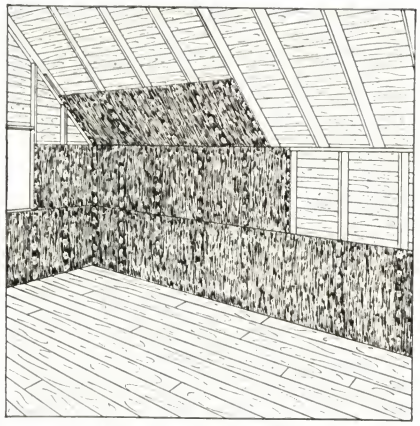
Standard Narrow Widths—125 sq. ft. in 9-in. width for continuous flashing around doors, windows, etc. Also 250 sq. ft. in 18-in. width for sheathing under cedar, red wood, and other hand split shakes.



Brownskin Used as a Protective Sheathing for Side-Walls Under Wood Finishes, Stucco or Brick Veneer



Two Layers of Brownskin Prevent Inner and Outer Moisture from Affecting Insulating Fillers



Brownskin Nailed to Inside of Studs Prevents Heat Losses in Unfinished Attics

COPPERSKIN—PURE LIGHT WEIGHT SHEET COPPER BONDED TO BROWNSKIN

Description of Copperskin

Copperskin is Brownskin inseparably bonded to a layer of pure Light Weight Sheet Copper with a bituminous compound. Copperskin is a high quality, corrosion-resisting sheathing, flashing and insulating material, providing the ultimate in moistureproofing, dampproofing and air-conditioning insulation.

Copperskin Is Perfect for Sheathing, Insulation and General Building Purposes

Permanent—***Lasts the Life of the Building***—Copperskin is impervious to water, dust and air even under excessive wind pressure, and it cannot rot out, dry out or disintegrate. In addition, it is proof against dry rot, fungi, and all types of vermin, including termites. Provides permanent protection for the life of the building.

Flexible—***Does Not Tear, Kink or Crack***—Copperskin is extremely tough and flexible. It may be handled freely without tearing, kinking, cracking, or puncturing. It can be formed by hand to fit into nooks, corners, and around odd shapes without breaking.

Moistureproof — ***Prevents Water Seepage***—Copper bonded to Brownskin creates a material which is absolutely moistureproof and in order to insure this same condition when secured to the framework, flat headed tacks should always be used and driven so as to make a tight fit.

Insulating—***Prevents Air-Infiltration***—Copper has a high insulating value due to its reflective qualities irrespective of whether the surface is bright or dull. Tests show that 1 oz., 1-ply Copperskin, when properly installed, has an insulating value equal to ½-in. of one of the best-known non-waterproof and non-moistureproof insulating materials in general use. Furthermore, Copperskin will always maintain its insulating value, whereas any insulating material which will absorb moisture frequently takes in so much moisture it becomes a transmitting instead of an insulating material.

As a protection to the interior of the house, especially when air-conditioning devices are installed, the maximum protection will be obtained if Copperskin is used on inside face of studs as well as outside face of the boarding.

Standard Types, Grades and Weights

Type 11.....	1 ounce Copper.....	1 Ply Brownskin
Type 12.....	1 ounce Copper.....	2 Ply Brownskin
Type 22.....	2 ounce Copper.....	2 Ply Brownskin
Type 33.....	3 ounce Copper.....	3 Ply Brownskin

Specifications—For Concealed Work Only

All exterior rough boarding on side walls, roof and elsewhere, as shown on drawings, shall be covered with Copperskin, laid copper side up.

All courses and the ends of rolls shall be lapped at least 2 in. and held firmly in place with copper tacks.

Copperskin shall consist of a continuous layer of Light Weight Sheet Copper cemented with bituminous compound to a continuous layer of Brownskin sheathing, as manufactured by Angier Corporation, Framingham, Massachusetts.

Cost and Sizes

For estimating purposes, prices for standard types will range approximately from 5 cents to 15 cents per square foot. For special grades and weights of Copperskin up to 5 ounce Copper and 5 ply Brownskin, prices will range to approximately 25 cents per square foot. All prices subject to market changes for copper.

Standard rolls, 30 in. x 120 lineal feet. Special grades and widths up to 60 in. will be made to order.

Drip Pans of Copperskin

For All Types of Homes at Nominal Cost

The highest standard of building construction calls for copper drip pans and copper flashing under and around windows in buildings of frame or brick veneer construction. But efficient drip pans up to now have had to be hand-made from sheet copper, and laboriously soldered—a plumber's or tinsmith's job, and a costly one.

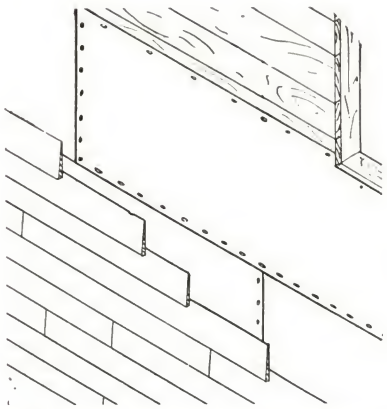
Copperskin has solved this problem. Type 22 Copperskin is a continuous sheet of pure 2 ounce copper inseparably bonded to two ply Brownskin. From it drip pans can be easily folded into shape and tacked in place at a cost of from 40 to 45 cents per window, plus only a few minutes' labor. A diagram is furnished with each roll, directing the cutting and the manner of folding, so that workmen can not go wrong. No soldering is required. Used with Copperskin Flashing, it makes an airtight seal around the windows.

Rolls furnished 8½ in. wide by 120 ft. long. Put up in a wooden package from which the amount desired can easily be drawn and cut for fitting to window sills or for flashings. The balance can be kept in this container for future use without being damaged. Copperskin drip pans will last as long as the building.

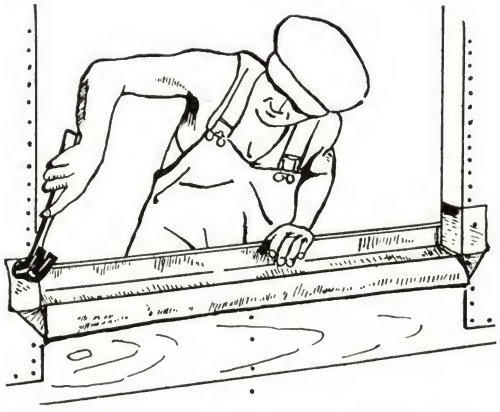
Stocked by dealers in principal cities. If not obtainable locally, Angier will fill orders direct.

Samples of Brownskin and Copperskin

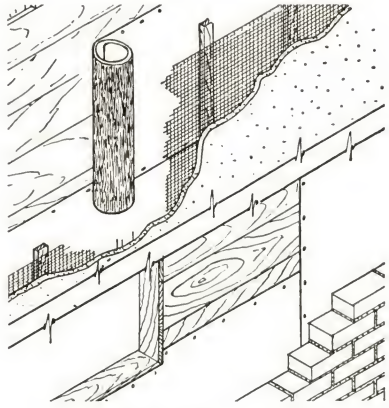
A free supply of specification covers in Brownskin or a sample of Copperskin sent to architects upon request.



Used Under Clapboards, Wood Shingles or Siding



Copperskin Drip Pans Are Easily Folded and Put in Place



Laid Under Stucco or Brick Veneer

THE SISALKRAFT CO.

205 West Wacker Drive, CHICAGO, ILL.

NEW YORK, N. Y., 101 Park Avenue SAN FRANCISCO, CAL., 55 New Montgomery Street

IN CANADA: ALEXANDER MURRAY & COMPANY, LIMITED—Montreal, Toronto, Saint John, N. B., Halifax, Winnipeg and Vancouver

SISALKRAFT

Products

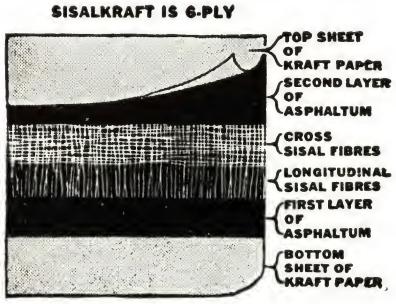
SISALKRAFT, a waterproof building paper re-enforced with sisal fibers.

It is available in three forms:

(1) PLAIN SISALKRAFT, with plain kraft surfaces.

(2) TREATED SISALKRAFT, with the kraft treated to resist dry rot and fungus.

(3) COPPER-ARMORED SISALKRAFT, a combination of Sisalkraft and 1 oz. or 2 oz. Anaconda electro-sheet copper.



Purpose

A builder or owner may think of building paper as unimportant because it represents so small a part of the cost of the building. But the architect knows that its function—excluding moisture and air—is fully as vital as that of any product in the building. He also realizes that this function cannot be performed if paper tears in application, is perforated by nailholes through the need for battening it in place, or disintegrates after the building is completed. Sisalkraft affords the architect a product which can insure the result he wants from building paper.

Architectural Advantages

As shown in the cross-sectional sketch, Sisalkraft consists of individual crossed sisal fibers, entirely embedded in asphalt, between covers of heavy kraft paper, the whole being combined under heat and pressure to form a monolithic sheet. The important advantages of this product are:

Imperviousness—Air and moisture infiltration must be controlled in most any structure, but this becomes vitally important with the introduction of air conditioning. The double layer of special quality asphalt in Sisalkraft stops air and moisture, even under abnormal wind pressure. The asphalt is protected from air by the kraft covers, so that it retains its original value indefinitely.

Sisalkraft Over Sheathing

Strength—The sisal re-enforcement prevents damage by fast or careless application, also wind ripping during the course of construction. No battens are necessary to hold it in place; consequently, no holes are left in the paper on removal of battens. Sisalkraft is correctly re-enforced, because (1) Sisal fibers, like paper are non-elastic. (2) Sisal is many times as strong as paper, for equal cross sections. Fibers are so evenly distributed in manufacture that any strain is resisted, no matter how applied. They are entirely embedded in asphalt, preventing the conduction of moisture into the sheet.

Flexibility—Can be bent around corner posts, around heads, sills and jambs of openings, carried over ridges and down into valleys without cracking. When bent up under baseboards, it provides a cold air stop and protection of boards without back painting.

Resilience—The kraft-protected asphalt is always elastic. It grips nail shanks, thereby preventing seepage.

Smoothness—The surface is so smooth that hardwood floors can be crowded into place over this paper without bunching or creeping.

Resistance to Dry Rot—Treated Sisalkraft is protected to resist attack of all fungi, including dry rot. It is therefore an ideal paper for all built-in applications because a slight seepage of moisture may start dry rot in almost any type of construction.

Metal Flashing—Copper-Armored Sisalkraft offers the advantages of non-corroding metal with the strength and workability of ordinary Sisalkraft. For such uses as concealed flashing and basement waterproofing, this thin sheet of copper is as effective as a rolled copper sheet of much greater thickness and cost.

Economy—The first cost of Sisalkraft is not high—in fact, lower than paper sometimes specified. And the ultimate cost to the owner may be even less than the cheapest because of Sisalkraft's superior functioning as noted.

Curing and Protecting Concrete Floors

Sisalkraft, being waterproof, airtight, and strong enough to stand the abuse of traffic over floors, is effectively used to cure and protect concrete floors.

The curing is automatic. As soon as floors have set so they may be safely walked upon they are completely blanketed with Sisalkraft, retarding moisture evaporation until maximum density and hardness of concrete has developed. While the cure is going on, floors at the same time are being protected from stains, inground construction dirt, and other causes of defacement, making it possible to deliver floors to the client in creditable condition. Sisalkraft provides cure and protection at one cost, much lower, according to construction authorities, than cost of using proper amounts of loose

You Can See the Effect of Curing with Sisalkraft

materials, such as sawdust or sand. (Please see specifications).

In skylight, floorlight, and sidewalk light construction of any type, the concrete sections are relatively thin and may dry so rapidly as to cause serious hair checking and cracking. Curing with Sisalkraft prevents this. (Please see specifications).

Insulation Protection

Residential—Every type of residential insulation is improved by protecting it with Sisalkraft against air-infiltration and moisture.

Specifications on request.

Steel Construction—In the modern building of steel construction insulation must be placed in contact with the masonry where there is a constant and sometimes severe moisture condition. Copper-Armored Sisalkraft, applied under and over the insulation as installed, provides for a dampproof and permanently efficient insulation of the building.

Specifications on request.

Basement Waterproofing

Copper-Armored Sisalkraft is an ideal material for waterproofing against hydrostatic pressure and in all situations where floor finishing materials are to be installed below grade.

Specifications on request.

HOW ARCHITECTS ARE SPECIFYING SISALKRAFT

Sisalkraft is used for a wide variety of purposes in buildings of all types—from the small bungalow to the large institution or public building. The following typical specifications show how architects are specifying it in some of the more common applications. In general, they use Plain Sisalkraft for concrete curing, Treated Sisalkraft in permanent applications where the advantage of resistance to dry rot is desired, and Copper-Armored Sisalkraft where the positive advantages of metal are sought. We will gladly furnish additional specifications needed for any particular use of Sisalkraft.

Outer Walls—All sheathing shall be covered with a layer of Treated Sisalkraft (as manufactured by THE SISALKRAFT CO.). The paper shall be applied horizontally, using large-head galvanized nails, with weather laps of at least four (4) inches. (Where shingles are specified it shall be applied directly to the sheathing and not between shingles.) It shall be carried over the studs, sills, heads and jambs of all openings and around all corner posts a distance of not less than nine (9) inches each way. Apply no more paper at a time than will be covered that same day. *(Note:* Stained shingles, wherever specified, must be thoroughly dry before they are applied.)

All exposed brick walls are to be dampproofed with a layer of Treated Sisalkraft applied vertically in the thirty-six (36)-inch width, the paper to be lapped two (2) inches and carried out over the subfloor a distance of one foot. Thereafter apply the furring strips for lathing on sixteen (16)-inch centres.

Flooring—Over all subfloors, Treated Sisalkraft (as manufactured by THE SISALKRAFT CO.) is to be applied in the widest widths practicable. It shall be applied to run at right angles to the direction of the finish strips and is to be lapped not less than four (4) inches. Sisalkraft shall be bent up at the baseboards at least four (4) inches and the baseboards brought down over it to provide a cold air stop.

Roofs—Over all roof decks (wood) Treated Sisalkraft (as manufactured by THE SISALKRAFT CO.) is to be applied using the thirty-six (36)-inch width and applying no more than will be covered that same day. Apply horizontally, using large-head galvanized roofing nails with weather laps of not less than four (4) inches. Carry the Sisalkraft over all hips and ridges and carry it down to the bottom of all valleys and up for a distance of at least eighteen (18) inches on each side of these valleys. *(Note:* Wherever stained shingles are specified they must be thoroughly dry before application.)

Basements, Porches, Garage Floors, Walks, and Driveways—As soon as the concrete has hardened sufficiently to be safely walked upon, it shall immediately thereafter be completely covered with Sisalkraft (as manufactured by THE SISALKRAFT CO.), applied in the widest widths practicable and given at least a four (4)-inch lap which is to be sealed in accordance with the advice of the manufacturer, and the entire covering is to be left on basement and other floors until the completion of the building, and on outside work for at least ten (10) days.

Window and Door Flashings—Concealed Type—All window and door openings shall be flashed with Copper-Armored Sisalkraft ten (10) inches wide, as indicated on blue prints.

Concrete Floors, Roofs and Paving—Curing and Protecting—As soon as the floors may be safely walked upon, and before any traffic is allowed or work done over them, they shall be covered with one layer of Sisalkraft. This paper shall be applied in the widest practicable widths; to be lapped at least four (4) inches and continuously sealed with a waterproof cement as directed by the manufacturer of the paper.

All cement floors, roofs and paving, both indoors and out, are to be protected and cured as above noted.

On floors specified to receive linoleum or other covering, the paper shall remain in place until all danger from construction dirt and spill is past. On outside work, the paper shall remain in place for not less than ten (10) days. On cement finish floors, the paper is to be maintained in good condition upon the floors until the building is ready for the final inspection.

Skylights, Sidewalk Lights, Floorlights—Where these lights are set in concrete, the concrete shall be cured by applying one layer of Sisalkraft in the widest practicable widths with all joints lapped four (4) inches and continuously sealed, the paper to be securely held in place around all edges and left upon the concrete for a period of not less than ten (10) days.

Terrazzo—Sand Cushion—Spread over the concrete foundation a bed of dry sand screeded to a uniform thickness of one-quarter (¼) inch and cover this sand with a layer of Sisalkraft applied in the widest practicable width lapped at least four (4) inches. Over the paper lay the underbed and proceed under the general terrazzo specification.

Terrazzo—Curing and Protecting—Terrazzo is to cure at least six (6) days before grinding. During this period it shall be covered with one layer of Sisalkraft, using the widest practicable width, lapping the joints at least four (4) inches and continuously sealing with a waterproof cement as directed by the manufacturer of the paper. After the grinding and polishing relay the paper and maintain it upon the terrazzo until the building is ready for the final inspection.

Hardwood and Parquet Floors — Moisture Stopping — Where floors are specified to be laid over concrete, apply one layer of Sisalkraft over the sleepers using the widest practicable width. Apply the paper lengthwise of the sleepers and loosely so that it is in contact with the concrete. All joints are to lap at least two (2) inches at a sleeper and not in between.

Basement Sub-fill—All concrete floor slabs shall rest upon a level fill of crushed stone at least nine (9) inches thick, covered with one layer of Sisalkraft lapped nine (9) inches or more. *Note:* Thickness of fill variable with soil conditions. The objective is to have the concrete slab above any water plane that may form.

ALFOL INSULATION COMPANY, INC.

155 East 44th Street, NEW YORK, N. Y.

ALFOL
Aluminum Foil
INSULATION

Alfol is pure aluminum foil of highest reflectivity. Applied in sheets between wall studs, furring strips, ceiling joists or roof rafters, it actively reflects radiant heat.

Reflective insulation has won world-wide recognition and acceptance. Heating and insulation engineers, architects, scientists and scientific institutions have applied exact and practical tests to Alfol under a wide range of conditions—and endorsed it.

Today, Alfol is used extensively by the United States Navy, railroads, air and steamship lines, leading industrial and commercial concerns throughout the world. In the home building field, Alfol is being used increasingly by architects and builders familiar with its many points of superiority.

This Alfol-insulated ceiling is equivalent in insulating effect to a solid concrete ceiling slab 8 ft. thick

Alfol insulation is an investment which especially appeals to home owners. They desire the year-round comfort Alfol gives them—cooler homes in summer, uniformly warm ones in winter with the elimination of cold drafts, cold rooms and rapid heat loss. And when, in addition to this extra comfort, they appreciate that Alfol Insulation will reduce their fuel bills up to 30%, they quickly recognize Alfol Insulation's intrinsic value.

The modern home is an insulated home. For the permanent satisfaction of your clients, for real economy, for true home comfort, specify Alfol Insulation on your home building projects.

Alfol is installed (as shown at the right) only by Alfol Authorized Applicators, located in practically every major city, in strict accordance with Alfol Standard Specifications. "One responsibility, one contractor" saves worry, money and time.

Alfol Advantages

(1) **Insulating Effectiveness**—The standard one-layer Alfol installation adds an insulating effect equivalent to a conductance of .17 B.t.u. per sq. ft., per hr., per degree F. temperature difference.

The standard two-layer Alfol installation adds an insulating effect equivalent to a conductance of .117 B.t.u. per sq. ft., per hr., per degree F. temperature difference.

Authority—National Bureau of Standards Circular LC-465, June 4, 1936.

Alfol has practically no heat-storage capacity, resulting in quick pre-heating or pre-cooling of rooms. In winter, Alfol saves up to one-third on fuel consumption. In summer, Alfol keeps the house 10° to 15° cooler.

(2) **Durability**—Alfol cannot warp, settle, bulge, rot or disintegrate. Years of exposure under adverse conditions prove durability and lasting effectiveness. Alfol will not tarnish.

(3) **Fireproof and Waterproof**—Alfol withstands heat of 1250° F., acting as a blanket to prevent the spread of fire. Alfol repels water, preventing water leaks, "wall sweat" and moisture penetration which may ruin interior decorations and wall coverings.

(4) **Clean and Sanitary**—Being metal, Alfol is clean. It will not harbor vermin; prevents bacterial growth.

(5) **Economical**—Alfol is really economical. Its installation cost is low. Its superior insulating effectiveness means maximum savings in fuel bills and greatest dividends in health and year-round comfort. Its durability insures permanent satisfaction.

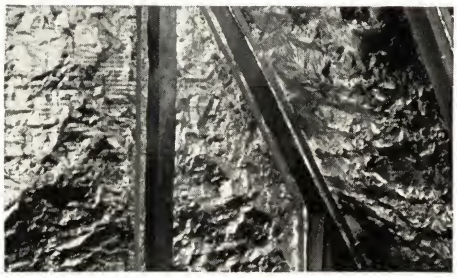
ALFOL

Send for a copy of our Architects' Data Book. It includes summer and winter performance records; testimonials; Standard Specifications; National Bureau of Standards approval of Aluminum Foil Insulation; and other factual evidence of the permanency, efficiency and economy of Alfol.

(1) Trained mechanics unreel measured sheets of Alfol as needed. These compact rolls cause no dust, dirt or waste.

(2) Crumpled Alfol is the only insulating material that allows a building to expand, contract or settle; the framing to warp or sag; with positively no effect on its insulating value.

(3) The crumpled curtain of Alfol is applied in spaces between wall studs, furring strips, ceiling joists or roof rafters.



(4) The flanged edges are nailed securely in place with ¾ in. wide fibre strips.

(5) All Alfol installations are finished with a layer of heavy building paper. Lath and plaster, wall or ceiling boards may be applied directly over it.

THE AMERICAN BRASS COMPANY

Manufacturers of Anaconda "Electro-Sheet" Copper for Weather-proofing and Damp-proofing

GENERAL OFFICES
WATERBURY, CONNECTICUT

MANUFACTURING PLANTS

ANSONIA, CONNECTICUT
BUFFALO, NEW YORK
TORRINGTON, CONNECTICUT
DETROIT, MICHIGAN
WATERBURY, CONNECTICUT
KENOSHA, WISCONSIN

OFFICES AND AGENCIES IN PRINCIPAL CITIES

IN CANADA: Anaconda American Brass Limited, NEW TORONTO, ONT.

For Other Pages, see File Index

SHEATHING

The common method used to protect a house against outward filtration of heated air or infiltration of air, moisture and dust, is to apply building paper or tarred felt against the rough sheathing. In the presence of moisture, building papers and felts have a tendency to disintegrate with the result that their effectiveness is practically lost.

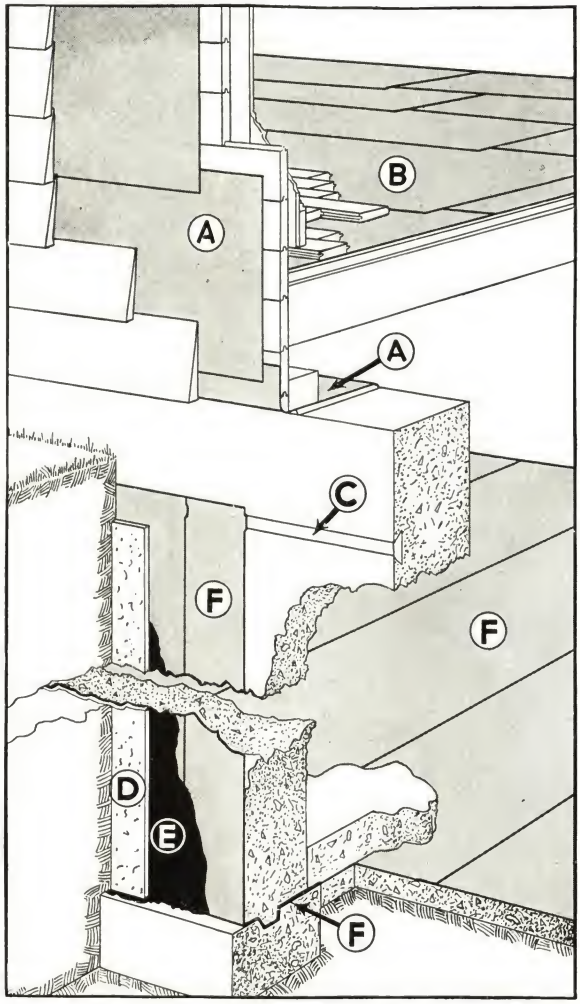
"Electro-Sheet", being pure copper, is not subject to such deterioration and, when applied as indicated in the drawing on this page, provides a durable airtight barrier, and is suggested as the most economical and practical method of preventing filtration through the surfaces to which it is applied.

Moreover, since most insulating materials are effective only when dry, it is quite important to have the insulation protected from the weather by the use of "Electro-Sheet" Copper.

ANACONDA "Electro-Sheet" Copper costs slightly more than ordinary building papers or tarred felts, but the fact that its effectiveness will continue for many years beyond the "life" of ordinary building paper is of more importance to the home owner than the slight additional original cost.

"Electro-Sheet" Copper bonded to a flexible backing of felt or Kraft paper is also available for weather-proofing and damp-proofing.

ANACONDA
from mine to consumer
REG. U.S. PAT. OFF.



Suggested Method of Weather-proofing and Damp-proofing with Anaconda "Electro-Sheet" Copper

(A) 1-ply, 1-oz. or 2-oz. "Electro-Sheet"
(B) 1-ply, 1-oz. "Electro-Sheet"
(C) Nailing strip
(D) Protective material
(E) Asphalt or pitch
(F) 2-ply, 2-oz. Electro-Sheet

ATTIC FLOOR LINING

Loss of warm air by outward filtration is most marked at the roof because of the tendency of warm air to rise. By applying a thin membrane of copper to the top of attic joists, clamping the edges of the sheets down with furring strips, and nailing the attic flooring over the strips, two dead air spaces are created, which, with the air-tight copper membrane, will largely overcome this loss of heat by outward filtration.

CELLAR WATER-PROOFING

The most effective method of cellar water-proofing is the application of sheets or layers of water-proofing material on the outside of the cellar walls. This is called the "membrane" method of water-proofing and is considered very satisfactory because it can readily be seen whether the work has been thoroughly done.

"Electro-Sheet" Copper is ideally suited for use as a water-proofing material, using the "membrane" method, because it is rust-proof, strong, ductile and can be readily applied as indicated in the sketch. This drawing suggests the use of two plies of 2-oz. "Electro-Sheet" applied with hot pitch or asphalt. Note that the "Electro-Sheet" is also applied to the concrete footing before the foundation wall is laid, extending through to join the "Electro-Sheet" water-proofing laid between the cellar sub-floor and the finished floor. This suggested construction provides complete protection against water and dampness.

"Electro-Sheet" Copper coated with various materials is also available for water-proofing purposes.

DESCRIPTIVE LITERATURE

ANACONDA Publication AD-4, containing drawings which show the manner in which "Electro-Sheet" Copper is used to weather-proof buildings of various types as well as a sample of "Electro-Sheet", will be mailed to architects upon request.

SAMPLES DISPLAYED WITH ARCHITECTS' SAMPLES CORPORATION NEW YORK, N.Y.

MEMORANDA

Ferro-Therm

METAL INSULATION FOR HOMES

AMERICAN FLANGE & MANUFACTURING CO., INC.
30 ROCKEFELLER PLAZA • NEW YORK, N. Y.

INSULATION Pays for Itself

THE NECESSITY OF BUILDING INSULATION IS *GENERALLY ACKNOWLEDGED*

Apt. House, Nashville, Insulated with *Ferro-Therm*
Arch. Henry T. Child

New York Apt. House Insulated with *Ferro-Therm*
Arch. H. I. Feldman

Res. St. Albans, L. I., Insulated with *Ferro-Therm*
Schmidt and Nasse, Bldrs.

Within recent years a great amount of thought and study has been given to the problem of thermal insulation for residential construction.

Insulation has played an important part in industry for many years but consideration of its application and its importance in home construction has had a slow advancement.

The introduction of air conditioning and the necessity of reducing the cost of heating with modern fuels such as oil and gas have resulted in the development of insulation.

Proper Protection of a Building Against Heat Losses Necessitates:

Insulation—As it has been found that the greatest losses are through the walls and roof, these areas must be constructed with proper insulating materials.

Reduction of Infiltration—Good construction of walls, floor and roofs and proper fitting or weatherstripping of doors and windows to eliminate infiltration of air.

Insulation Reduces:

Heat losses in Winter—and therefore the cost of fuel.

Size of the heating plant required—A smaller boiler and less radiation is required in a well insulated house.

Insulation Produces:

Uniform Winter warmth and comfort in the house—Drafts and cold floors are eliminated.

Coolness and comfort in the house in Summer—The intense Summer heat cannot penetrate through insulated walls and roof. The entire house is cool and comfortable day and night.

A sound investment—The saving in fuel pays for the entire cost of insulation within two to five years and this saving continues for the life of the house. You save money at the same time that you are enjoying the comfort of an insulated home. On the other hand, an uninsulated home costs more to heat and does not give you the comfort. Lack of insulation costs money and comfort.

Increased original and resale value of a house—The value of a house is greatly increased when it is insulated. The use of insulation in fine residences is now practically universal and is demanded by real estate interests. It is therefore essential that insulation be given the utmost consideration in order to protect your investment.

OR The Building Owner Pays for Lack of It

Correcting Some Old Impressions Regarding Insulation

For years it was thought that it was necessary to have thick mass materials depending on the multitude of minute dead air cells that were contained in the mass.

This practice has been found to have certain disadvantages which have been eliminated by modern facts and practice in insulation.

Heat Travels By Means of Three Mediums

Conduction—the transfer of heat from molecule to molecule in materials that are in direct contact with each other.

Convection—the transfer of heat by means of circulating currents which carry the heat, such as circulating air currents.

Radiation—the transfer of heat by means of electromagnetic waves which carry heat energy.

Radiated Heat Most Important Factor

Of the three mediums, radiation is responsible for 66 to 85% of the total heat transfer as shown in diagram at right.

Of all common metals which have been found to reflect a high percentage of radiated heat, steel is one of the most efficient and practical as well as the strongest and most durable.

Steel reflects a high percentage of radiated heat. This means that the major portion of the total heat does not penetrate the surface of the steel at all but instead it is reflected back toward its source.

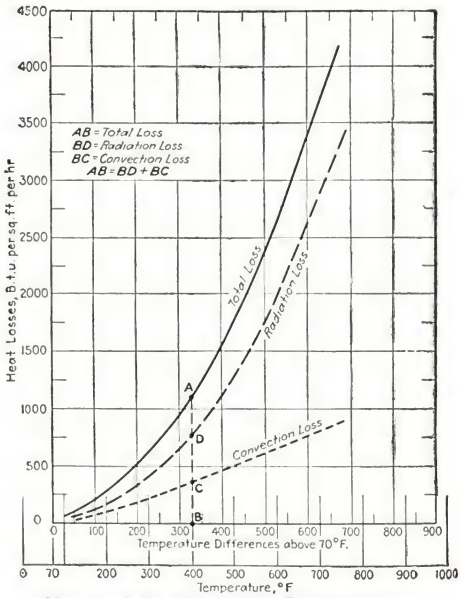


Chart of Comparative Heat Losses

A bright mirror-like surface is not necessary for steel to maintain this high reflectivity of heat. Heat rays and light rays are entirely different in this respect. A looking glass which is the best reflector of light reflects practically no heat at all. The molecular structure of the surface is the important factor and comparatively dull steel surfaces will reflect heat as efficiently as brightly polished surfaces.

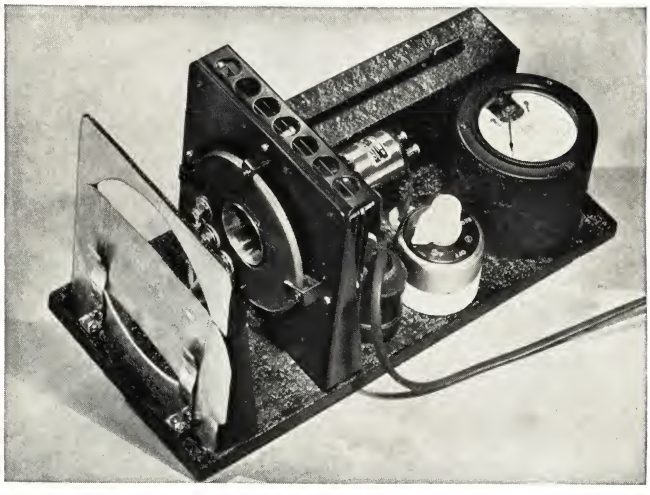
Modern Theories and Practice in Insulation

The Reflectivity of Heat Actually Demonstrated on a Reflectometer

The illustration below shows a reflectometer which consists of an electric heater operating at approximately 400 degrees Fahrenheit radiating heat against the material to be tested which is held in a frame a few inches from the heater. The heat that is reflected from this material is thrown back through a funnel against a thermopile, where the reflected heat energy is turned into electrical energy and recorded on an ordinary galvanometer.

A material of known reflectivity to heat, as given by the International Critical Table, is placed in the frame and the amount of heat reflected is recorded on the galvanometer. Then steel or other metals are placed in the frame, and the recording of the galvanometer shows exactly the percentage of heat that they reflect.

Materials other than metals reflect little or no radiated heat but instead absorb this heat which is carried on through them by conduction. With such non-reflecting materials it is necessary to have a mass of the substance to retard this heat that is absorbed from being conducted on through the material. Old type mass insulation materials worked on this principle employing a multitude of dead air cells in their structure to prevent this conduction.

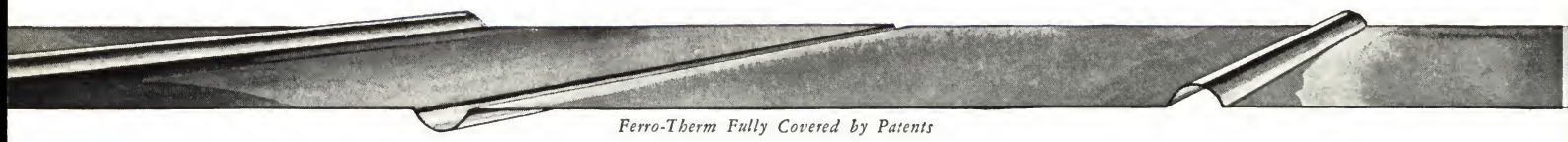


The Reflectometer which Demonstrates the High Reflectivity of *Ferro-Therm*

Modern steel insulation does not absorb this heat at its surface, therefore it does not need this mass to prevent the heat from passing on through. The dead air space maintained after installation prevents the remaining portion, conducted and convected heat from passing through.

Ferro-Therm

(*Registered Trade Mark*)



Ferro-Therm Fully Covered by Patents

Ferro-Therm **as It Comes to the Job**

Cutting Five Sheets of *Ferro-Therm* at One Time

Flanging Five Sheets of *Ferro-Therm* after Cutting

Sheet Steel Insulation

Ferro-Therm is a steel sheet insulation which *reflects* 95% of all radiated heat which strikes it from either side. This high reflectivity is effective throughout the entire range of temperature from sub-zero up to 1000°F. Thus, in Winter, heat inside the building is reflected back into the building from the walls and roofs, thereby reducing heat losses. In Summer, the heat waves from the sun are reflected back by Ferro-Therm from the walls and roof of the building, preventing the heat from entering the building.

Ferro-Therm sheets are especially prepared and cleaned of all scale or foreign matter. This leaves a smooth dull surface and a reflectivity of 95%, which is due to the *molecular construction* and not to the polish of the surface.

Its Non-Corrosive Alloy Coating

Naturally the first thought is to protect the clean surface from corrosion. This is accomplished by coating it with an alloy of lead and tin which completely protects it against corrosion. This coating does not detract from the reflectivity of the steel plate whereas lacquers or paints of any kind or color would reduce the same plate so treated to 30% of its true value.

Delivered in Handy-Sized Sheets

Ferro-Therm is made in sheets 24 x 32 inches and in 0.006 of an inch thickness, making it easy to handle as it weighs only 0.25 lbs. per square foot. It is packed flat, 600 sq. ft. to a box. Each box is identified with the American Flange & Mfg. Co. trade mark as illustrated above.

Crimped for Extra Stiffness

On account of the lightness of the metal the sheets are crimped at 4-inch intervals in order to stiffen the sheets when in place, and to make them easy to handle on the job.

Made to Fit Standard Spacing of Studs

The sheets are of such a size that they are adaptable to either 12 or 16 inch spacing of studs without waste, or to 20 inch spacing of roof rafters with slight waste.

The sheets are delivered flat and are then cut on the job to fit the spacing of the studs. Half the 32 inch dimensions of the sheet, or 16 inches, allows for the bending of a flange on each side for stapling between studs 16 inches on centers. Half the 24 inch dimension, or 12 inches, allows for the flange for stapling between studs on 12 inch centers.

Cutting and Flanging the Sheets

The sheets of metal are thin, and five sheets can be cut at a time by a knife cutter, similar to a large paper cutter, as shown in the illustration.

The flanged edges are made on the sheets with a simple brake, and 5 sheets can be quickly flanged at the same time. The metal can readily be cut to fit any special shape.

Installation by Carpenter

The entire installation of Ferro-Therm is done by carpenters.

AMERICAN FLANGE METAL INSULATION

ADVANTAGES OF *Ferro-Therm*

1. Reflects 95% of all Radiated Heat

As the greatest losses of surface heat have been found to be by radiation, the fact that Ferro-Therm will reflect 95% of radiated heat is of the utmost importance in considering insulation.

2. Has a Dull, not Polished Surface

The surface of Ferro-Therm is a smooth dull surface rather than a highly polished light-reflecting surface such as a mirror. Actual tests on the reflectometer show that Ferro-Therm reflects just as much heat when it is dull as when it is bright.

3. Protected Against Corrosion or Deterioration

The coating of lead and tin alloy assures a perfect protection for the steel against corrosion due to any ordinary atmospheric conditions in the wall or roof construction.

4. Does not Absorb Moisture

Being a non-absorbent and corrosion resisting metal, Ferro-Therm will not absorb moisture. Therefore, the high efficiency of Ferro-Therm is not decreased as is the case in other insulation materials that do absorb moisture. Furthermore the reflection of heat by the Ferro-Therm sheets actually keeps the air space warm and dry. This serves to keep the plaster of the walls and ceiling dry, thereby preserving the plaster decorations.

5. Does not Settle or Pack Down

Ferro-Therm cannot settle or pack down because the steel sheets are stapled permanently in place. Loose mass types of insulation do settle and pack down from vibration and gravity and their efficiency decreases accordingly. Ferro-Therm cannot be affected in this way.

6. All Metal, Non-Combustible

Ferro-Therm is all metal, with strength and rigidity and is non-combustible. Ferro-Therm being of steel affords a very definite fire stop.

7. Vermin-Proof

Being metal, Ferro-Therm will not support or harbor vermin. Termites, rodents and insects cannot penetrate Ferro-Therm.

8. Light in Weight

Ferro-Therm weighs only 0.25 lbs. per square foot with a thickness of 0.006 inches or United States gauge No. 38.

9. Not Readily Damaged

Ferro-Therm has the structural strength and stiffness of steel and is not easily damaged.

10. Easily Handled and Installed

Being light in weight and in small sheets the insulation is easily handled on the job. Five sheets are generally cut at a time on account of the thinness of the metal. A carpenter can install on an average of from 600 to 800 sq. ft. a day in an ordinary frame house construction.

11. *Ferro-Therm* Affords Definite Fire Protection

Due to the fact that Ferro-Therm is steel which will not burn and will reflect heat above 1000°F. the wood framework of the house inside the Ferro-Therm is protected from the penetration of fire for a reasonable period.

12. Protects Studs from Dry Rot

Protection of house construction prevents rotting from moisture. Ferro-Therm cannot absorb moisture from the air and therefore does not convey any moisture to the frame work which would cause the wood to rot. The air space maintained by the method of installation of Ferro-Therm also eliminates any chance of dry rot.

Installing *Ferro-Therm* Sheets Over Attic Beams

Installing *Ferro-Therm* Between Ceiling or Floor Beam

Installing *Ferro-Therm* in Frame Wall

THE INSTALLATION OF *Ferro-Therm*

(Registered Trade Mark)

Ferro-Therm Fully Covered by Patents

The Cutting Tool for *Ferro-Therm*

Brake for Forming Flanges on *Ferro-Therm*

Magazine Stapling Hammer for Installing *Ferro-Therm*

Ferro-Therm is delivered to the job in cases containing 112 sheets standard size 24 x 32 inches.

The light weight, convenient size, and lack of bulk makes handling and storage of Ferro-Therm very simple.

Cutting Sheets

The first operation is to cut the sheets of Ferro-Therm if they are to be installed between studs or rafters. For 16-in. center studs the sheet is cut in half on the 32-in. dimension making 2 sheets 16 x 24 ins. For 12-in. center studs the sheet is cut on the 24-in. dimension making 2 sheets 12 x 32 in. The sheets are cut on a cutting board similar to a large paper cutter. Five or six sheets may be cut at one operation.

Flanging Sheets

After cutting, the edges of the sheets are flanged from ½-in. to 1-in. depending on the exact spacing of the studding. The flanging is done on an ordinary brake consisting of two 2 x 4's hinged together, one of them being fastened to the floor or bench. The sheets are put between the 2 x 4's with the desired flange dimension extending through and then the free 2 x 4 is turned over flanging the sheet as it does so.

Installation of Furring Strips

Ordinary wood lath or ½-in. furring strips are cut in lengths to fit between the studs. These are nailed to the inside face of the wood sheathing between the studs, starting at the floor and spacing the lath every 24 or 32 inches depending on the length of the sheets of Ferro-Therm.

The sheets of Ferro-Therm are then stapled to the lath overlapping the sheets approximately 1 inch. The sheets are also stapled directly to the studs, stapling them through the flanged edges. By installing Ferro-Therm in this manner a definite series of dead air spaces or blankets is maintained between the sheets and the sheathing.

Installation Tools

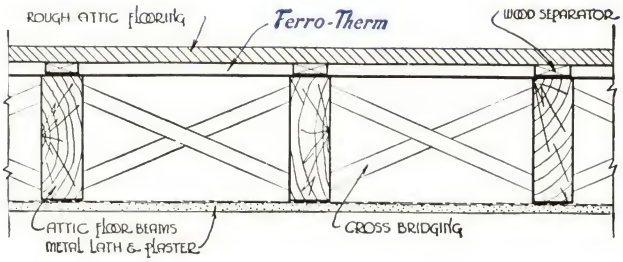
Stapling is done by means of automatic stapling hammers which hold approximately 100 staples in a magazine. This speeds up the installation.

Cutting boards, flanging machines and stapling hammers are available on loan from the American Flange and Mfg. Co.

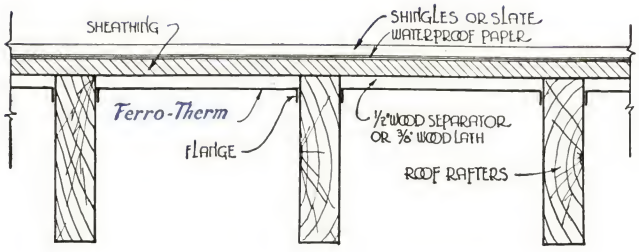
Installation of *Ferro-Therm* Over a Second Floor Ceiling

It is also practical to install the sheets flat on the face of the ceiling joists. This is the common practice where the attic is to be left unfinished with no flooring. In this method each sheet spans two joists and is stapled directly to the face. If a floor is desired later it is simply necessary to nail furring strips along the joists over the Ferro-Therm and then apply the flooring directly on the furring strips.

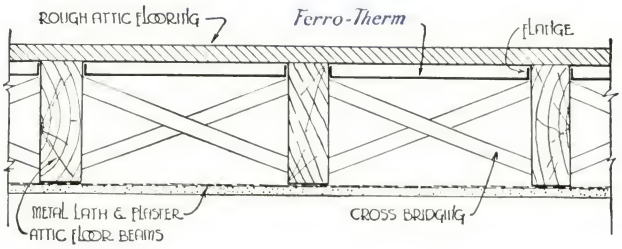
TYPICAL DETAILS FOR INSTALLING *Ferro-Therm*



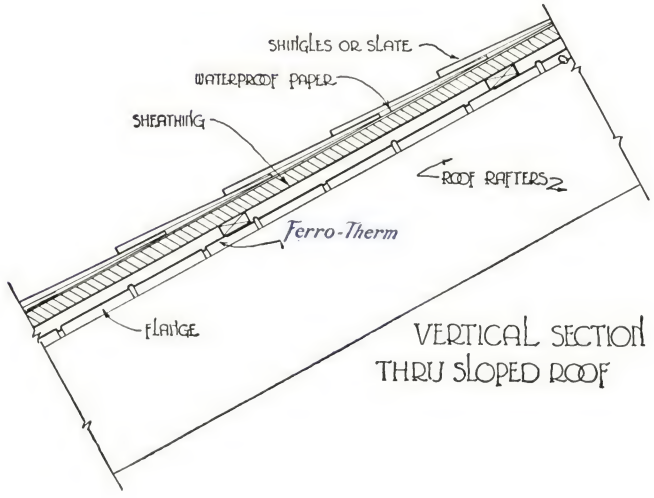
SECTION THRU SECOND FLOOR CEILING
SHOWING *Ferro-Therm* INSTALLED ON TOP OF FLOOR BEAMS



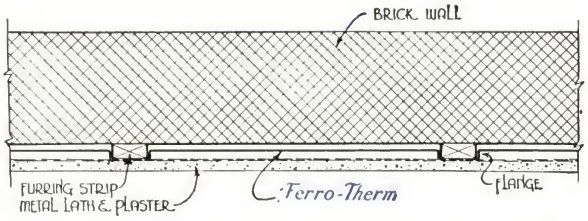
TYPICAL SECTION THRU SLOPED ROOF
SHOWING *Ferro-Therm* INSTALLED BETWEEN ROOF RAFTERS



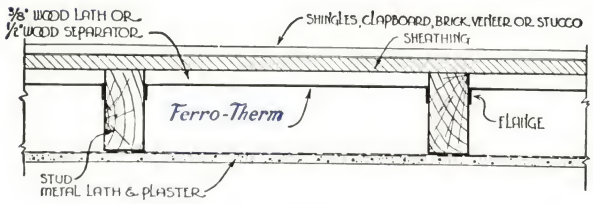
SECTION THRU SECOND FLOOR CEILING
SHOWING *Ferro-Therm* FLANGED BETWEEN BEAMS



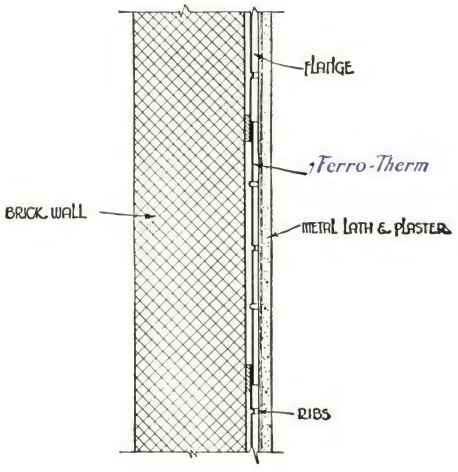
VERTICAL SECTION
THRU SLOPED ROOF



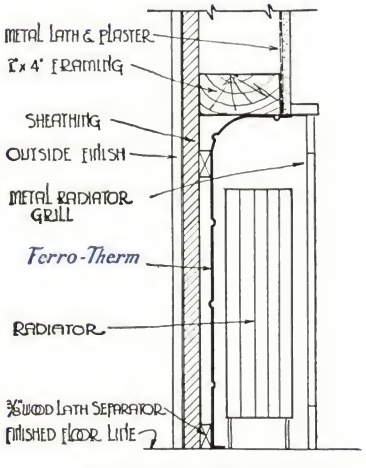
TYPICAL PLAN SECTION THRU BRICK WALL
SHOWING *Ferro-Therm* INSTALLED BETWEEN FURRING STRIPS



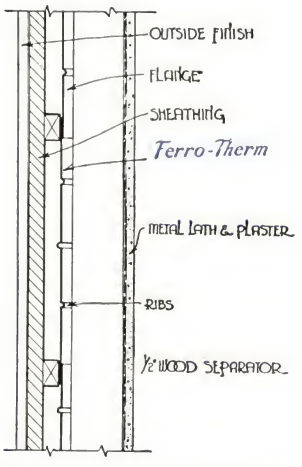
TYPICAL PLAN SECTION THRU FRAME WALL
SHOWING *Ferro-Therm* INSTALLED BETWEEN STUDS



VERTICAL SECTION THRU BRICK WALL



VERTICAL SECTION THRU
RADIATOR ENCLOSURE



VERTICAL SECTION THRU
FRAME WALL

RATINGS OF EFFICIENCY OF *Ferro-Therm* FROM TESTS CONDUCTED BY RECOGNIZED AUTHORITIES

A. S. OF REFRIGERATION ENGINEERS HANDBOOK

K Value is taken from tables on page 232 and 234, 1936 Edition of this book.

K = 0.217 B.t.u.'s per sq. ft. per hr. per °F. temp. diff.

ARMOUR INSTITUTE OF TECHNOLOGY

Statement by Prof. J. C. Peebles, M.E., Armour Institute of Technology, Chicago, Illinois, after making tests of Ferro-Therm Metal Insulation:

"The Thermal conductivity results obtained from the flat plate tests showed lower results than I have obtained from any other type of insulation. It is also interesting to note that in the refrigerator tests no moisture was observed on the metal insulation or in the insulation space. This is contrary to the results obtained when the usual commercial forms of insulation are used. . . ."

K = 0.226 B.t.u.'s per sq. ft. per hr. per °F. temp. diff.

For Calculations in Designing Adequate Heating and Air Conditioning Systems:

Exterior Walls — Shingle, Clapboard or Brick Veneer Construction with Sheathing — 1 sheet of Ferro-Therm installed between Studs — Lath and Plaster.

U = 0.10 B.t.u.'s per sq. ft. per hr. per °F.

Solid Masonry Walls 1 x 2 in. Furring — 1 sheet of Ferro-Therm installed between Furring — Lath and Plaster.

U = 0.10 B.t.u.'s per sq. ft. per hr. per °F.

Roof — Shingle Roof, Sheathing over Rafters — 1 sheet of Ferro-Therm between Rafters—Lath and Plaster.

U = 0.10 B.t.u.'s per sq. ft. per hr. per °F.

Combined Value of Pitched Roof insulating with 1 sheet of Ferro-Therm and second floor ceiling consisting of Lath and Plaster, Joists, Rough Flooring.

U = 0.05 B.t.u.'s per sq. ft. per hr. per °F.

SPECIFICATIONS FOR INSTALLING *Ferro-Therm*

Insulation for Residences

Scope. Insulation shall be installed in the following locations, (list locations, cellar, ceiling, exterior walls, walk and roof of enclosed porch, attic floor, all roofs, radiator pockets.)

Insulation Material and Protection

Insulation for the above locations shall be Ferro-Therm Metal Insulation in sheets 24 x 32 in. as manufactured by American Flange & Mfg. Co., 30 Rockefeller Plaza, New York City. Ferro-Therm shall be delivered at the job in original package and shall be protected from the weather until used.

Installation of Insulation

Ferro-Therm shall in general be cut to fit between studs or rafters turning ½ in. flange on each long side for stapling to the face of the studs. Staples shall be as supplied with the Ferro-Therm and shall be set not less than 6 in. apart.

Roof Insulation

Entire roof, including flat or sloping surfaces and sides and roofs of dormer and gables, shall be insulated with Ferro-Therm. After permanent roof finish is applied, Ferro-Therm shall be installed between the rafters, from plate to ridge, and furred off ⅜-½" from the underside of the sheathing with common wood lath or furring strips nailed to the sheathing and spaced so that ends of Ferro-Therm sheets shall lap 1". The Ferro-Therm shall be stapled through the furring strips and through the flanged edges to the rafters.

Attic Floor Installation

Ferro-Therm Metal Insulation shall be installed over the joists or beams of the entire attic after the roof is covered in. Sheets shall be installed flat with overlaps of approximately 1 in. and stapled to the joist not more than 6 in. apart. Where rough floor is to be laid, furring strips should be laid above each beam over the Ferro-Therm before applying rough floor.

Sheets shall be cut and fitted at all plates and openings to prevent infiltration of air at these locations.

Exterior Walls

Masonry—Ferro-Therm Metal Insulation shall be installed on furring strips on all masonry walls. The sheets of Ferro-Therm shall be cut and flanged to fit snugly between the furring strips. Horizontal wood lath strips shall be fastened to the top of each sheet by staples before the sheet is fitted between the furring strips. Each sheet shall then overlap the sheet below by approximately 1 inch over the lath strip and shall then be stapled to the lath strip. Sheets shall then be stapled through the flanged edges to the furring strips. All staples shall be spaced not more than 6 inches apart. All sheets shall be fitted at plates, sills and around windows and doors to prevent infiltration of air at these locations.

Frame or Veneer Walls

Ferro-Therm Metal Insulation shall be installed between the studs of all interior walls, including (enclosed porches, bay windows or other projection or recesses).

Note—Floors of overhanging bay windows, rooms above unheated porches, or over unexcavated portion, etc., should be insulated with Ferro-Therm in the same manner as the roof except that the insulation should be placed ⅜ in. from the bottom of the floor beams.

For Wood Sheathed Walls

The sheets of Ferro-Therm shall be cut and flanged to fit snugly between the studs. Horizontal furring of ⅜ in. wood lath or ½ in. furring strips, shall be stapled to the inside face of wood sheathing between the studs at all horizontal joints between sheets of Ferro-Therm.

The sheets of Ferro-Therm shall be lapped 1 in. over the furring strips and stapled to them and to the studs through the flanged edges not less than 6 in. apart. All sheets shall be fitted at plates, sills, around windows, doors and other openings to prevent infiltration of air at these locations.

Radiator Pockets in Interior or Exterior Walls

All radiator pockets for enclosed or exposed radiators shall be lined with Ferro-Therm Metal Insulation on back, sides and top as directed by the architect or according to details.

Note—(Ferro-Therm must not be painted as it will lose 2/3 of its insulation and reflecting efficiency).

Ferro-Therm USED IN THESE RESIDENCES

Res. Lawrence, L. I. Kraushaar Bros., Arch. and Bldrs.

Res. Mamaroneck, N. Y. Arch. Harrison Gill

Res. Teaneck, N. J.

Res. Lawrence, L. I. Arch. Henry T. Child

Res. Glen Ridge, N. J.

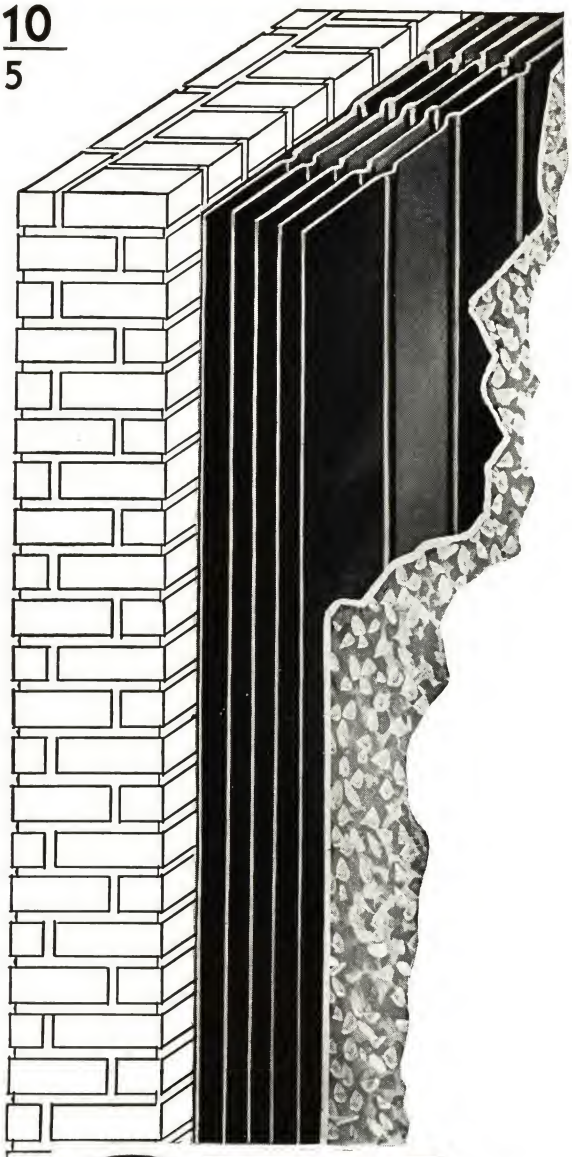
St. Albans, L. I. Schmidt and Nasse, Bldrs.

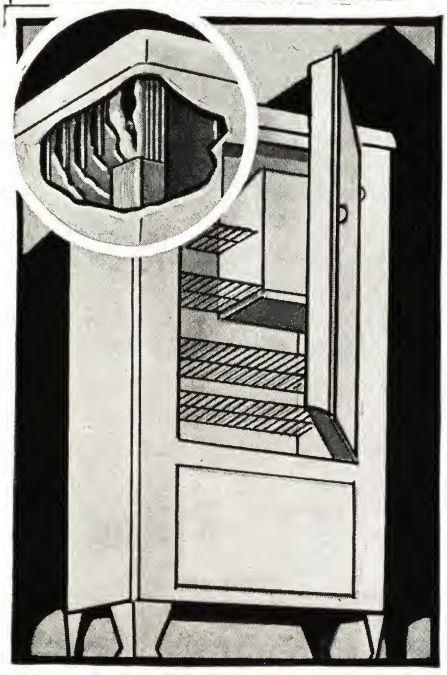
ARCHITECTS WHO HAVE USED *Ferro-Therm*

Beers and Farley
Geo. P. Butler, Jr.
De Rose and Cavalieri
Henry T. Child
Randolph H. Almiroty
G. J. Couchois
H. I. Feldman
Geo. Fernschild, Jr.
Harrison Gill
Matthew W. Del Gaudio
Kimball and Husted
Knappe and Morris
O'Hara and Edson

OTHER USERS OF *Ferro-Therm*

The Barrett Co.
The Dupont Co., Belle, W. Va.
The General Electric Co.
The United States Army
Johnston Livingston Co., Inc., *Builders*
Residential Construction Co. *Builders*
Ridgefield Lakes, Inc., *Builders*
John R. Thompson Co., *Restaurants*
The Westinghouse Co.
Kraushaar Bros., *Architects and Builders*





Ferro-Therm As Used in Cold Storage and Ice Box Construction

Ferro-Therm

For

REFRIGERATION

Requirements for a Good Refrigeration Insulation

For many years refrigeration engineers have searched for the ideal insulation material for cold storage use.

Some of the most important requirements for such a material are:

1. High insulating value.
2. Positive non-absorption of moisture.
3. Resistance to disintegration from moisture.
4. Resistance to deterioration which causes loss of efficiency in insulating value.
5. Resistance to rodents and vermin.
6. Elimination of the necessity for continually renewing insulation.
7. Non-absorbing of, or giving off of, odors or gases.
8. Low in cost.
9. Low operating cost for high efficiency.

Ferro-Therm AN IDEAL INSULATION

Ferro-Therm is an insulation which answers all of these requirements.

(1) High Insulating Efficiency

As has been previously described, the efficiency of Ferro-Therm is based on entirely different principles from those of mass insulators.

It has also previously been stated that radiant heat is responsible for from 60 to 80% of heat losses. In refrigeration it is the great proportion of radiant heat which must be prevented from entering the refrigerator from the outside in comparison with heat from conduction, which is important.

Ferro-Therm reflects 95% of the radiant heat which tries to enter the refrigerator from the outside. This high reflectivity, plus the efficiency of the dead air spaces between the sheets of Ferro-Therm, accounts for its extraordinarily low K value.

(2) Resistance to Moisture

Ferro-Therm being a metal will not absorb moisture, therefore moisture cannot collect in it.

(3) Protection from Deterioration

Ferro-Therm is protected from corrosion by a non-corrosive coating and does not disintegrate as absorbing products do.

(4) Retains Its Efficiency

Ferro-Therm retains its efficiency permanently. It does not require a bright polished surface but depends on the molecular structure of the steel for its reflective qualities which are permanent.

(5) Resistance to Rodents, Vermin, Bacteria and Micro-Organisms

It is impossible for rats and vermin to chew tunnels and make nesting places in this steel insulation. It will not support life for rodents.

(6) Not Necessary for Periodical Renewal

The destruction caused by rodents and by loss of efficiency and deterioration caused by absorption of moisture is entirely absent when Ferro-Therm is used.

(7) Non-Absorption of Odors or Gases

As Ferro-Therm is a metal it will not absorb gases or odors and therefore cannot give them off.

(8) Low in Cost

In addition to its efficiency it is very low in its cost for material and installation.

(9) Low Operating Cost

As it has extremely high efficiency in insulating value and as this value is permanent it assures a constant efficiency value after installation.

A Report of Interest to Refrigeration Engineers

The following excerpts from a report of tests made by J. C. Peebles, M.E., Armour Institute of Technology, Chicago, Ill., give some very interesting information. This is especially true with regard to the condition of absence of moisture.

"A number of refrigerator tests have been conducted with five leading makes of electric domestic refrigerators. In these tests your metal insulation was compared with the insulating material originally installed in the refrigerator by the manufacturer.

"The thermal conductivity results obtained from the flat plate tests showed lower results than I have obtained from any other type of insulation. In one case I obtained as low as 0.195 B.t.u.'s per hour, per square foot of material, per degree Fahrenheit of temperature difference between the surfaces of the material for one inch thickness.

"The results obtained from the refrigerator tests indicate that your metal insulation is superior to any other insulation now being used for refrigeration work. It is also interesting to note that in the refrigerator tests *no moisture was observed on the metal insulation or in the insulation space. This is contrary to the results obtained when the usual commercial forms of insulation are used.*"

The United States Government Specifies *Ferro-Therm*

STANDARD GOVERNMENT FORM OF CONTINUATION SCHEDULE FOR FORM 31 OR 33 (SUPPLIES)

SCHEDULE OF SUPPLIES — INSTALLED ICE BOXES FOR C.C.C. CAMPS AND SECOND CORPS AREA

Ice Box Specifications: Note: The contractor must furnish and deliver all material according to specification and all labor for proper construction and erection of the ice box and equipment in accordance with this specification and drawing No. 607-E. Copy of this drawing will be furnished bidder upon request.

Information to Be Furnished with Bid: Each bidder shall submit with his bid, a complete description of the type of material he proposes to furnish and proposed construction which will enable the contractor to guarantee a temperature to be maintained from *not more than 35 degree to 40 degree Fahrenheit,* under normal service conditions. Insulation to have an over-all thermal conductivity of .1 B.t.u. per square foot per hour per degree (Fahrenheit) temperature difference.

Construction: Insulating Material in walls, ceiling, door, and floor to be *Ferro-Therm metal insulation* consisting of four (4) parallel spaced metal sheets or material of equal *high thermal-insulating value* and *resistance to moisture.* Insulating material shall be properly installed and supported. It may fill space between walls to insure protection against infiltration of air and moisture.

Where *Ferro-Therm* is Used

Ferro-Therm is specified wherever refrigeration is used in such construction as:

Cold Storage Rooms
Ice Boxes and Refrigerators
Hospitals
Fur Storage
Cold Storage Buildings
Breweries
Beer Cooling Rooms
Refrigerator Trucks
Refrigerated R.R. Cars and Containers
Dairies
Ice Cream Plants
Refrigerator Ships

Services

The services of a fully equipped laboratory and a trained engineering staff are free to prospective users for the purpose of designing the most efficient combination of Ferro-Therm metal insulation for specific purposes.

Write to the American Flange and Mfg. Co. for complete engineering data and estimates on refrigerator constructions insulated with Ferro-Therm.

New York Address: 30 Rockefeller Plaza, New York City

Two Views Showing Installation of *Ferro-Therm* in Kitchen Ice Box at Camp Dix

Ferro-Therm

METAL INSULATION

AMERICAN FLANGE & MFG. CO., INC.

30 Rockefeller Plaza, New York City

FACTORY AND BRANCH OFFICE

825 South Kilpatrick Avenue, CHICAGO, ILL.

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SECTION 10

CONTINUED ⟶

THE BARRETT COMPANY

40 Rector Street
NEW YORK, N. Y.

2800 S. Sacramento Avenue
CHICAGO, ILL.

Fairfield P. O.
BIRMINGHAM, ALA.

THE BARRETT COMPANY, LIMITED, MONTREAL, QUE.

For Complete Catalog on Barrett Built-up Roofing, Roof Flashing, Drainage, Waterproofing and Dampproofing, see File Index

BARRETT ROCK WOOL INSULATIONS

General Description

For homes which profess to be modern—or "modernized"—some form of wall and attic insulation against excessive transmission of heat and cold is imperative. The Barrett Company, with a background of 84 years of building experience, supplemented with years of experimentation with the subject, believes, along with the preponderance of architects, construction engineers and builders, that Rock Wool offers by far the greatest insulation value for the average building . . . be it residential, public or industrial.

The home-building and home-buying public is strictly aware of the benefits of Rock Wool Insulation. Their neighbors and friends, who have had their homes so insulated, have proved to them that a cooler and more comfortable interior is assured in summer . . . and that warmer rooms, absence of drafts and cold floors, more healthful living conditions and lower fuel costs are to be expected in winter. It is not too much to predict that in the near future no house, either new or old, can be marketed readily without insulation in walls or attic. Discriminating buyers and builders of new homes now insist on fully insulated construction.

Applying Barrett Batts in Sidewall

Applying Barrett Batts to Attic Floor

Characteristics of Rock Wool

Barrett Rock Wool is a fibrous mineral material made by melting a selected high silica limestone. The resulting liquefied rock, at between 2500° and 3000° F., is "blown" with a jet of steam, forming a fibrous wool-like material which contains over 90% dead air cells. These cells, which resist penetration by cold or heat, give Rock Wool an unusually low heat conductivity . . . the correct measure of efficiency of all insulating materials.

Permanent — Fire-proof — Light In Weight

Because it is made from rock, Barrett Rock Wool is a permanent type of insulation that will not deteriorate with age. It is a fire-proof material that is also vermin resistant, odorless and clean. Its light weight makes for ease and economy in handling. It is a non-conductor of electricity.

Economy — Both In First Cost and Installation

A distinct advantage of Barrett Rock Wool is the comparatively low cost of the material itself . . . and, being light weight, it is easy to handle and can be applied quickly, keeping labor costs at a minimum. Various forms of Barrett Rock Wool are available, as follows:

Batts

Mainly used in the insulation of new structures, or for unfinished rooms and attics. Batts are made to fit between standard studs, roof rafters and floor joists, and can be cut to fit snugly into special areas such as around window casements, door frames, etc. Batts are furnished, as desired, with or without a special waterproof paper backing which has a 1½" lap along the edges for fastening to framing.

BARRETT ROCK WOOL BATTS FURNISHED IN SEVERAL SIZES

BATTS—FULL WALL THICKNESS

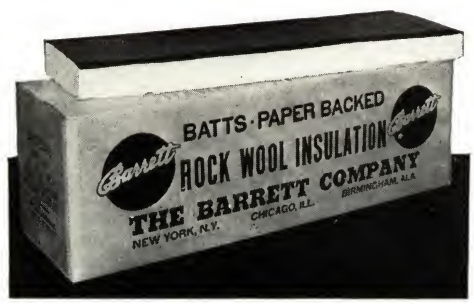
Type V43....Paper Backed—Size 15" x 48": Carton 5 Pcs.—25 sq. ft.
Type V23....Paper Backed—Size 15" x 23": Carton 8 Pcs.—19.16 sq. ft.
Type S23....Standard —Size 15" x 23": Carton 7 Pcs.—16.77 sq. ft.

BATTS—SEMI WALL THICKNESS

Type V42....Paper Backed—Size 15" x 48": Carton 8 Pcs.—40 sq. ft.
Type V22....Paper Backed—Size 15" x 23"; Carton 12 Pcs.—28.75 sq. ft.
Type S22....Standard —Size 15" x 23": Carton 12 Pcs.—28.75 sq. ft.

DEMI BATTS—FULL WALL THICKNESS

Type D.....Size 9" x 15"—Carton 20 Pcs.—18.75 sq. ft.



Rock Wool Batt

Granulated

Barrett Granulated Rock Wool is used for insulating existing buildings. It is installed in sidewalls and in attic spaces . . . by the blowing method. The installation machine, operating outside the house, packs the granulated wool by pneumatic pressure through openings made in the wood or brick siding. Barrett Granulated Rock Wool is designated as:

Type G—Granulated—Wt. per Bag—35 lbs.

Loose

Barrett Loose (long fibre) Rock Wool is an alternative material, used for both new construction in side walls and for packing attic floors and ceilings. It comes in two types, as indicated below:

Type L—Loose (long fibre) Wool—Weight per bag 35 lbs.

Type P—Improved Loose Wool—Size 9″ x 15″ x Full Wall Thickness. Bag 22 Pcs.—20.62 sq. ft.

SPECIFICATIONS FOR FURNISHINGS AND INSTALLING BARRETT ROCK WOOL BATTS

Barrett Rock Wool Batts shall be furnished and installed by the contractor as follows:

The building shall be completely insulated as specified herein and as shown on the drawings, so as to provide a continuous blanket of insulation over the entire area specified.

Exterior wood frame walls shall be completely filled with insulating material from top of foundation walls to roof.

Exterior solid masonry walls shall be waterproofed on the inner face (by others) before the insulation is installed. The insulating material shall be installed between the furring strips (minimum depth 2″) from top of foundation wall to roof.

Unfinished attic spaces shall be filled with insulating material between all ceiling joists. Alternate: between all roof rafters, gable end studs, in dormers, etc.

Finished attic spaces shall be filled with insulation between attic ceiling joists, roof rafters, gable end studs and in dormers.

Heated portions of the building extending beyond the main walls so that they are exposed on the under side, (*i.e.* sun parlor, room over porch, etc.) shall have the spaces between floor joists filled with insulating material.

Garage attached to building shall have insulating material in all wall spaces between the garage and building. Alternate for heated garage: in all outside garage walls and garage ceiling but not in wall between garage and building.

Garage under building shall have the ceiling spaces filled with insulating material.

Pipes and other equipment containing water and extending outside of the insulated portions of the building shall be protected from freezing.

Spaces outside the insulated portions of the building, such as attics, shall be adequately cross ventilated to the outside air, preferably through louvre ventilators at opposite ends of such spaces.

All insulation shall be installed in accordance with the manufacturer's printed instructions therefor.

SPECIFICATIONS FOR FURNISHING AND INSTALLING BARRETT GRANULATED WOOL BY THE PNEUMATIC METHOD

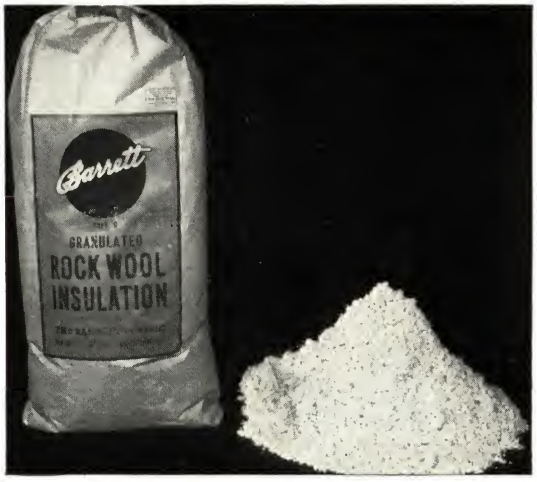
Barrett Granulated Rock Wool shall be furnished and installed by a Barrett Approved Home Insulation Contractor.

The building shall be completely insulated as specified herein and as shown on the drawings so as to provide a continuous blanket of insulation in all exterior walls above the foundation walls and in roofs, attics, ceilings and garages where necessary.

The insulating material shall be applied uniformly by the pneumatic method or manually where this is impossible or impractical and to a thickness of not less than 3⅝″ except where space provided is less than this, in which instance the insulation shall fill the space. The insulation density when in place shall not exceed 10 lbs. per cubic foot.

The contractor shall furnish all materials, labor, equipment and services necessary and there shall be no special or additional work, materials, etc., required of other contractors in connection therewith.

All openings necessary for installing the insulation and all closing, patching, refinishing, etc., of walls, roofs, etc., shall be done by the Home Insulation Contractor.



Granulated Rock Wool

"Blowing" Granulated Rock Wool in Sidewall

SAMUEL CABOT, INC.

Building Insulation

141 Milk Street, BOSTON, MASS.

For Branch Offices and Agents, see our pages on Stains and Collopakes

Products

HEAT-INSULATING and SOUND-DEADENING "QUILT."

For Shingles, Stains, Collopakes (for every paint use), Waterproofings, Wood Preservatives, see File Index.

Cabot's

Heat-Insulating Sound-Deadening

"Quilt"

Samuel Cabot Inc.

Cabot's Heat-Insulating and Sound-Deadening "Quilt"

Uses—For insulating houses and other buildings to make them warm in winter and cool in summer; for insulating cold storage and ice houses; refrigerators; for deadening sound in floors and partitions of apartments, hotels, hospitals, schools, etc.

Cabot's "Quilt" Applied to Walls, for Heat Insulation

Description—Cabot's "Quilt" is a felted, flexible matting of Zostera Marina, a marine plant, stitched between two layers of strong Kraft paper. Zostera Marina forms a structure full of tiny dead air cells, which give it tremendous insulating value. *"Quilt" has a thermal conductivity (K) of 0.25 B.t.u. per hour,* per square foot per inch thickness per degree difference in temperature at 90° F. Figures for other insulations range from 0.27 to 0.33, showing that "Quilt" gives from 8% to 30% more insulation. These figures are based on tests made by the U. S. Bureau of Standards.

Permanent—Cabot's "Quilt" is not affected by moisture and will not rot, deteriorate, get foul, or harbor vermin. It does not settle, and therefore retains its full insulating value during the entire life of the building. This is proved by over 40 years of successful experience.

Fire Resistant—Standard "Quilt" is highly fire resistant, and will not support combustion. Anti-Pyre "Quilt" has a specially treated fire-resistant paper and meets the most rigid requirements of fireproof construction.

Application—"Quilt" is easily cut with an ordinary knife or shears. No skill is needed to apply it, and so the cost of installing "Quilt" is very low.

Widths—18-in. width, for quick application between studs and roof rafters; and the standard 36-in. width.

Thickness	Approx. thickness, in.	Width, in.	Shipping weight, lbs. per roll	Sq. ft. per roll
Single Ply	⅛	36 18	40 20	250 125
Double Ply	½	36 18	65 32½	250 125
Triple Ply	⅜	36 18	90 45	250 125
Inch "Quilt"	1	36 18	65 32½	125 63

Special Types—Anti-Pyre—fire retarding "Quilt"; Waterproof "Quilt" made with waterproof paper covering; Asbestos "Quilt" (Single, Double and Triple-ply only) covered with asbestos paper.

Standard Method of Application and Conduction Values

Following are given 10 standard methods of applying Cabot's "Quilt" for heat insulation together with the K, or heat conduction values, figured in all cases for Double Ply (XX) "Quilt." Conductivities will be decreased still further by the use of Triple Ply (XXX) or Inch "Quilt."

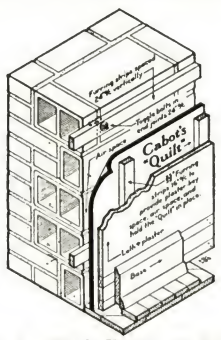


Fig. 1. Brick Veneer on Hollow Tile Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.123

(If Quilt is omitted K equals 0.186)

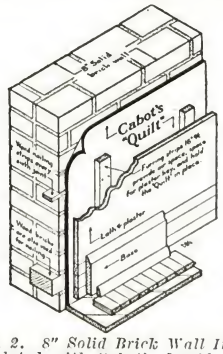


Fig. 2. 8" Solid Brick Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.179

(If Quilt is omitted K equals 0.250)

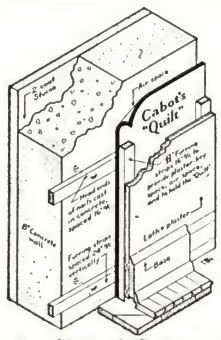


Fig. 3. Stuccoed Concrete Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.160

(If Quilt is omitted K equals 0.285)

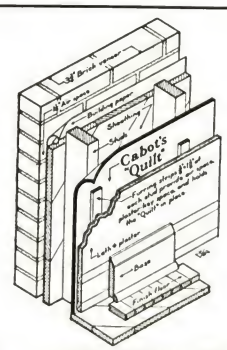


Fig. 4. Brick Veneered Frame Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.122

(If Quilt is omitted K equals 0.207)

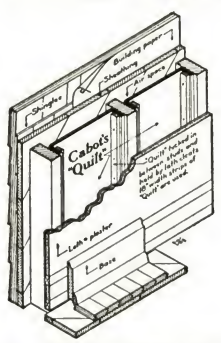


Fig. 5. Shingled Frame Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.152

(If Quilt is omitted K equals 0.252)

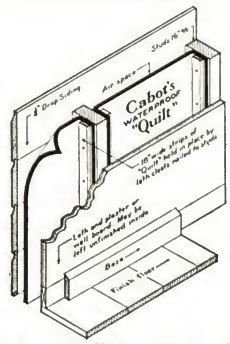


Fig. 6. Low Frame Wall. Economical Construction. Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.168

(If Quilt is omitted K equals 0.318)

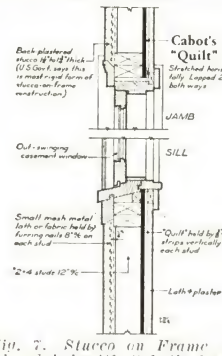


Fig. 7. Stucco on Frame Wall. Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.191

(If Quilt is omitted K equals 0.380)

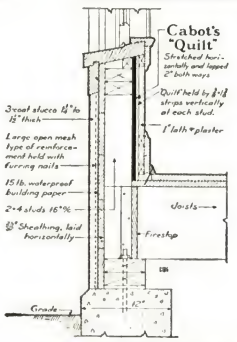


Fig. 8. Stucco on Sheathed Frame Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.167

(If Quilt is omitted K equals 0.296)

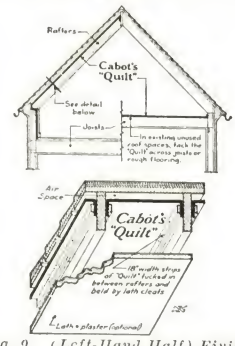


Fig. 9. (Left-Hand Half) Finished Attic Insulated with Cabot's Double Ply Quilt Between Rafters

K (conductivity): 0.161

(If Quilt is omitted K equals 0.288)

(Right-Hand Half) Unfinished Attic. Unheated

K (conductivity): 0.141

(If Quilt is omitted K equals 0.262)

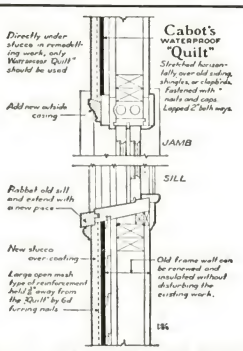


Fig. 10. Stucco Over Old Wooden Frame Wall (Remodeling) Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.186

(If Quilt is omitted K equals 0.283)

Fuel Saving

The approximate fuel saving obtained by heat insulation with Cabot's "Quilt" as shown and specified above may be secured as follows: Buildings with conductivities (when insulated) of 0.16 will show a heat saving of approximately 39-43 per cent, as compared to uninsulated structures. In some cases the saving is even greater.

Tests

Conductivity and heat saving values of Cabot's "Quilt" are fully covered by tests made at the U. S. Bureau of Standards. (U. S. Letter Circular No. 227, Bureau of Standards, Washington, D. C., and Tests made at Massachusetts Institute of Technology.) Copies of these will be forwarded on your request.

Residence in Redding Ridge, Conn.

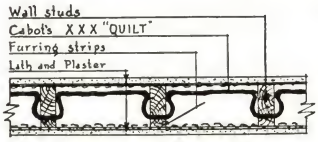
EVANS, MOORE & WOODBRIDGE, Architects
Insulated with Cabot's Double-ply Waterproof Quilt
Painted with DOUBLE-WHITE

Cabot's "Quilt" for Sound-Deadening

Cabot's "Quilt" is the first material ever made for scientific deadening of sound. Sound travels in waves; "Quilt" breaks up these waves and absorbs them in its elastic cushion. One layer of Triple Ply "Quilt," properly installed, will cut off 85% of the sound passing through a wall. For this reason, "Quilt" is used extensively in schools, apartments, hotels, hospitals, and broadcasting stations.

Diagrams below show some common methods of sound-deadening with Cabot's "Quilt." Sound reduction percentages are based on tests made at Massachusetts Institute of Technology. For full report of these tests and more illustrative diagrams, please ask for a copy of Laboratory Bulletin No. 5-A.

Sound-Deadening Partitions (Wood Construction)



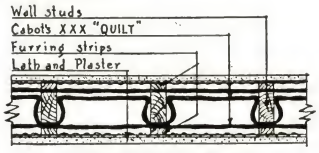
SOUND REDUCTION 67%

Left:

Specifications—In this case a layer of Cabot's XXX (Triple-Ply) "Quilt" is wrapped around the stud on one side before lathing. The "Quilt" is carried away around each side of the stud and fastened with nails and caps as shown. Furring strips are then applied to face of studs and lath applied to these strips, leaving the "Quilt" between. A sound reduction of 67% results from this construction.

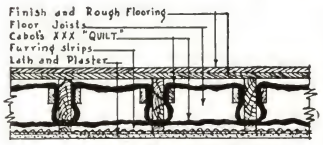
Right:

Specifications—In this type of construction, three layers of Cabot's XXX (Triple-Ply) "Quilt" are applied as shown. First, a single layer is wrapped around the studs, then two flat layers on each face of studs. Furring strips are then applied on both sides and then lath and plaster. This construction effects a sound reduction of 91%. Only 9% of the original sound transmitted, without insulation, can penetrate.



SOUND REDUCTION 91%

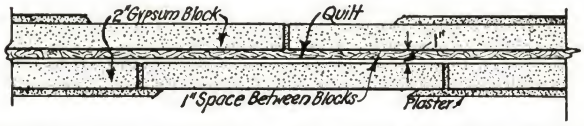
Sound-Deadening Floors (Wood Construction)



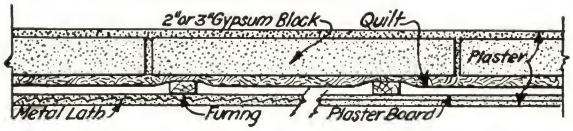
SOUND REDUCTION 60.6%

Specifications—In this case essentially the same method is employed, as above, except that here the "Quilt" is applied beneath the floor timbers, bent around each one and secured in place by light lath or strips as shown. An additional layer of "Quilt" is stretched loosely along the bottom of the timbers which are then furred, lathed and plastered in the usual manner.

Sound-Deadening Partitions in Fireproof Apartments, Office Buildings, etc.



Specifications—For most effective sound-proofing with Gypsum Block Partitions, lay up double partitions of 2-in. Gypsum Block with 1-in. space between, within which Double-Ply or Triple-Ply Cabot's "Quilt" is to be hung. Plaster directly on outside of blocks.



Specifications—With single Gypsum Block Partitions nail "Quilt" vertically to one or both sides, apply furring strips or metal lath and plaster, or apply plaster board to outside surfaces.

Acoustical Correction, Elimination of Echo

Cabot's "Quilt" has wide use in this connection, for acoustical correction of theatres, office buildings, churches, etc. Problems of this kind are individual in nature. Our engineers will be glad to assist you on problems of this kind.

Samples and Co-operation with Architects

Samples of all types of "Quilt" with full information promptly sent on request. We are always ready to co-operate fully, without obligation, on any question of heat insulation or sound deadening and to place our experience of over 40 years at your disposal.

ESTABLISHED 1873

THE PHILIP CAREY COMPANY

Manufacturers of Heat Insulation and Asbestos Products

LOCKLAND, CINCINNATI, OHIO

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DETROIT, MICH.
INDIANAPOLIS, IND.
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KNOXVILLE, TENN.
LOS ANGELES, CAL.
LOUISVILLE, KY.
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PITTSBURGH, PA.
ST. LOUIS, MO.
SEATTLE, WASH.
WASHINGTON, D. C.
WHEELING, W. VA.

For pages on Carey Built-up Roofing, Shingles, and Heat Insulation, see File Index

Carey ROCKTEX

HOME INSULATION

The Improved Rockwool for New and Existing Buildings

LOW CONDUCTIVITY

The use of Carey Rocktex Wool for home insulation—winter and summer—has been a logical result of the increasing knowledge and appreciation on the part of architects, home owners and builders of the part that insulation plays in the conservation of heat in winter and the maintenance of low temperatures in summer. There is not only a saving in fuel bills, but a noticeable increase in comfort the year round.

Ordinary rock wools have been rated for years as having a conductivity rating of 0.27 B.t.u. per sq. ft. per hr. per degree F. difference in temperature, per 1-in. thickness.

The exceptionally low conductivity of Carey Rocktex Wool is demonstrated by the following thermal rating, as given by the Mellon Institute of Industrial Research:

0.217 B.t.u. per sq. ft. per hr. per degree F. difference in temperature at 50° F. mean temperature.

0.24 B.t.u. per sq. ft. per hr. per degree F. difference in temperature at 70° F. mean temperature.

0.265 B.t.u. per sq. ft. per hr. per degree F. difference in temperature at 90° F. mean temperature.

USES

Loose Wool—Used in the walls of new construction before the lath is applied. Carey Rocktex Wool in the Loose Fibre form should be installed with a uniform density, taking care to leave no void spaces.

Satisfactory for flat open attics of new and old homes providing care is taken by the workman in following the coverage instructions.

Granulated Wool—Easily poured between the joists in flat open attics. When installing Granulated Carey Rocktex Wool the workman should carefully follow the coverage instructions for obtaining best results.

Bats—Carey Rocktex Wool Bats assure perfect insulation for the sidewalls of new construction. They are easily cut with a knife to fit odd spaced framing. This type of insulation combines high efficiency with a saving in labor costs.

For top floor ceiling insulation of new or old homes Carey Rocktex Wool Bats are ideal. They are easily applied in the most difficult framing.

Bats are suitable for insulating the rafter line of the roof when half-stories are contemplated in the attic areas. They may be easily held in place with a lacing of light gauge soft wire.

Carey Rocktex Wool Bats may be had without paper backing or with paper backing with flanged edges for nailing to studs or rafters.

Pads—Carey Rocktex Wool Pads are the middle-priced product for attic insulation. They are easily applied and assure a uniform density when installed with no void or uninsulated portions.

Pads have definite advantages over loose wool for sidewall insulation. Because of the ease of their installation there is a correspondingly lower labor cost. The finished job will have an absolutely uniform density, and because of the definite coverage in each package it is possible to ship to each job the exact quantity required.

IMPORTANT FEATURES OF CAREY ROCKTEX WOOL

(1) Made from rock.
(2) Fine silky fibres that enable handling without gloves.
(3) Will not deteriorate or disintegrate.
(4) Will not harbor mice or vermin.
(5) Manufactured at 3000° F., therefore fireproof.
(6) Will not absorb moisture—moisture repellent.

HIGH COVERAGE CAPACITY

Type	Packed	Coverage
Loose Fibre	35-lb. paper bags	17 ft. gross area per bag 3⅝ in. thick over flat areas
Granulated	35-lb. paper bags	17 sq. ft. gross area—3⅝ in. thick over flat areas
Bats (paper backed) 15 x 48 in. x wall thickness	4 bats per carton	20.00 sq. ft. per carton 50.0 cartons per 1000 sq. ft.
Bats (paper backed) 15 x 48 x 2 in. thickness	6 bats per carton	30.0 sq. ft. per carton 33.33 cartons per 1000 sq. ft.
Bats 15 x 23 in. x wall thickness	8 bats per carton	19.16 sq. ft. per carton 52.2 cartons per 1000 sq. ft.
Bats 15 x 23 x 2 in. thickness	12 bats per carton	28.75 sq. ft. per carton 34.75 cartons per 1000 sq. ft.
Pads 8 x 15 in.	24 pads per carton	20.000 sq. ft. per carton 50.0 cartons per 1000 sq. ft.

COST

It is extremely difficult to give very accurate estimating cost on installing Carey Rocktex Wool Home Insulation due to the fact that freight to various territories will naturally vary the cost of installation. Carey Rocktex Wool Home Insulation applicators and dealers are located in all principal cities and are in a position to extend this information when desired.

CONDENSED APPLICATION GUIDANCE

New Construction—***Walls***—Wall thick Carey Rocktex Wool Bats to be installed between the studs in all outside walls.

Alternate: Carey Rocktex Loose Wool to be packed to the full depth of all outside wall studs.

Ceilings—Wall thick Carey Rocktex Wool Bats to be installed between all ceiling joists.

Alternate: Carey Rocktex Loose Wool to be packed above the top floor ceiling and to be installed wall thick (approximately 3⅝ in.).

Sloping Roof—Wall thick Carey Rocktex Wool Bats to be installed between roof rafters and held in place with a lacing of light gauge wire or by a suitable packing nailed to the face of the rafters.

Alternate: Carey Rocktex Loose Wool to be packed between roof rafters to a depth of not less than 4 in. and to be held in place with a suitable backing nailed to the face of the rafters.

Note: Suitable backing to be specified by the architect.

Existing Structures—***Walls***—Carey Rocktex Insulating Wool to be so installed to completely fill the outside hollow walls of the building.

Ceilings—Carey Rocktex Insulating Wool to be installed across all top floor ceilings to a depth of not less than approximately 3⅝ in.

Sloping Roof—Carey Rocktex Insulating Wool to be installed between roof rafters and between the roof boards and the lath and plaster to the full depth of the rafters.

Samples, descriptive literature and more complete information may be had by calling on the Philip Carey branch or distributor located in your city or by writing THE PHILIP CAREY COMPANY, *Lockland, Cincinnati, Ohio.*

THE EAGLE-PICHER SALES COMPANY

INSULATION DIVISION

GENERAL OFFICES

Temple Bar Building, CINCINNATI, OHIO

BALTIMORE, MD., 359 Guilford Ave.
BOSTON, MASS., 11 Wharf St.
BUFFALO, N. Y., 70 W. Chippewa St.
CHICAGO, ILL., 4401 So. Western Blvd.
CINCINNATI, OHIO, 1030 Broadway
CLEVELAND, OHIO, Broadway and E. 9th St.
DALLAS, TEX., 2215 Laws St.
DETROIT, MICH., 1627 W. Fort St., Room 406
JOPLIN, MO., C and Porter Sts.
KANSAS CITY, KAN., Southwest Blvd. and State Line
MINNEAPOLIS, MINN., 437 Harding St., N.E.
NEW ORLEANS, LA., 411 So. Peters St.
NEW YORK, N. Y., 420 Lexington Ave.
PHILADELPHIA, PA., Delaware Ave. and Lombard St.
PITTSBURGH, PA., 1713 Liverpool St., N.S.
ST. LOUIS, MO., 1218 Olive St., Room 1002
TULSA, OKLA., Thompson Bldg., Room 312

For Lead Pigments for Paint, see File Index

EAGLE MINERAL WOOL HOME INSULATION

Eagle Home Insulation Spun from Mineral Rock

Eagle Insulation for homes is a fluffy, woolly material spun from mineral rock. Selected raw products are melted at high temperatures, passed over live steam and blown out into a mass of woolly fibers.

Because it is honeycombed with millions of tiny, enclosed dead-air cells, Eagle Insulation forms an extremely effective barrier to the transfer of heat by convection and conduction, and the solid portions of the material retard the transfer of heat by radiation. And because Eagle Insulation is light in weight and easily handled, it is quickly installed in all types of residential and commercial structures to provide efficient low-cost, wall-thick insulation.

Eagle Insulation is offered in two forms:

Type H-1. Applied Pneumatically

For structures already built, Eagle Insulation is available as "granulated wool" which is applied pneumatically in sidewalls and attics. Frame, brick veneer and stucco houses can be insulated without construction alterations by this special pneumatic method.

Hollow spaces between wall studdings are filled to full wall thickness. In unfinished attics, Eagle Insulation is blown between joists in the floor or applied in full depth to the underside of rafters and secured in place with wallboard.

Authorized Eagle-Picher insulation contractors, employing competent workmen, are located in most large cities.

Type H-3. Bats for New Construction

Eagle Insulation is also available in felted "bat" form for houses under construction. These rectangular pads are made in two full wall-thick sizes: 15x18 and 15x23 ins. They fit snugly between studdings and joists.

Irregular spaces around doors or windows are easily filled by cutting the "bats" to exact size.

Thermal Conductivity of 0.27 at 103° F.

According to U.S. Bureau of Standards Tests, Eagle Insulation in 1-inch thickness possesses the remarkably low thermal conductivity rating of 0.27 B.t.u. per sq. ft. per hour at 103° F. mean temperature. In full wall thickness, Eagle Insulation stops the flow of heat as effectively as a concrete wall 12 ft. thick. (See chart on next page.)

So effective is Eagle Insulation in retarding heat flow that homes during summer months are kept as much as 15° cooler than outside temperatures. Upstairs rooms (often unbearable in uninsulated homes) are usually no more than 1° warmer than rooms downstairs.

EAGLE EP PICHER

Fuel Savings Pay for Insulation

Eagle Insulation literally seals furnace heat inside the home during cold winter months. Whether gas, coal, coke or oil is burned, a significant load is taken off the heating plant. Homes are far easier to keep comfortably warm and fuel savings generally run as much as 40% of the season's total. These savings pay for the cost of insulation in a few years' time.

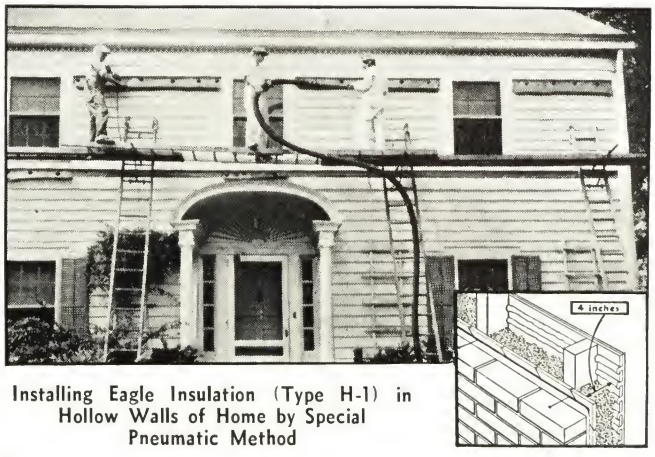
Fireproof—Reduces Fire Hazard

Unlike many insulating materials which are described as being "fire-safe" or "fire-resistant," Eagle Insulation is absolutely fireproof. It will not burn. Fire hazard in Eagle Insulated homes is greatly reduced. Hollow spaces in walls, which ordinarily act as flues once a fire starts, are completely filled with a material that even a blow torch cannot ignite.

As a result of tests conducted by the Civil Engineering Laboratories of Columbia University, the Bureau of Buildings of the City of New York has given full approval to use of Eagle Insulation "where fire-retarding is required under the provisions of the Building Code and the Multiple Dwelling Law." Similar acceptance has been granted by other civic agencies, including the Building Department of the City of Boston and the Board of Tenement House Supervision of the State of New Jersey.

Non-conductor of Electricity

Eagle Insulation has also been approved by the Underwriters' Laboratories, Inc. as being a non-conductor of electricity. It is, therefore, not harmed by lightning. While the wiring within most homes is protected, this non-conducting insulating material provides added protection in case of short circuits.



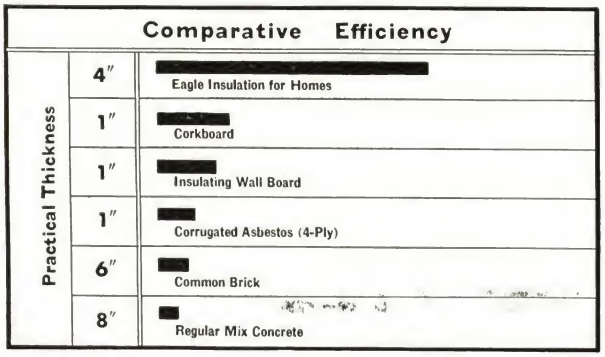
Installing Eagle Insulation (Type H-1) in Hollow Walls of Home by Special Pneumatic Method

Water-Repellent

Exhaustive tests show that Eagle Insulation is water-repellent. Samples exposed to completely saturated atmosphere for 100 hours gained less than 0.2% in weight due to moisture absorption. This is extremely important since insulating materials which absorb water soon have but little better insulating efficiency than water itself.

Light-Weight—Will Not Settle

Eagle Insulation is outstanding for its lightness in weight. As applied, it weighs between 1½ and 1¾ lbs. per sq. ft. At the same time, it has the necessary mass to hold itself in position over indefinite periods of time. It will not settle or "drift," leaving empty unprotected spaces. A test wall panel, filled with Eagle Insulation, was mechanically lifted and dropped ¼ in. 116 times per minute for 4 hours. After 27,840 jolts, the shrinkage of the insulation was so slight as to be scarcely detectable—only 0.014 of the original volume.



Comparison of the Insulating Efficiencies of Common Building Materials
(Chart based on Applied Thicknesses)

Eagle Wall-Thick Bats (Type H-3) Quickly Installed in New Construction

Lasts a House-Time

Being made of mineral wool, Eagle Insulation contains no vegetable matter to attract insects or pests. It is rotproof—will not deteriorate. It will not settle. Full insulating efficiency is provided that outlasts the structure itself.

Made by Dependable Manufacturer

THE EAGLE-PICHER LEAD COMPANY, maker of Eagle Home Insulation, has been manufacturing reliable home and industrial products since 1843. Their vast experience in serving this field has proved invaluable in the manufacture of efficient, fireproof, low-cost insulation for residential and commercial use.

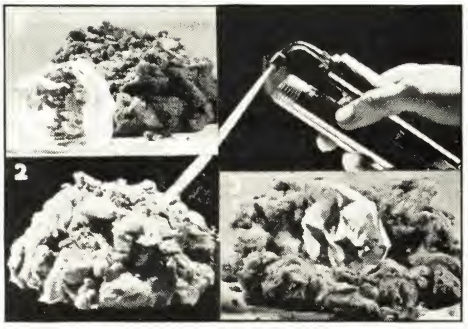
THESE 4 SIMPLE HOME TESTS PROVE THE EFFICIENCY OF EAGLE INSULATION

(1) Boiling Water Test

Time how quickly a pan of water heats to boiling on your kitchen range. Then pad an inch or two of Eagle Insulation on the grill over the burner and try to boil another pan of water. If the flame does not reach beyond the edges of the pad, the water will not heat. In fact, the top of the pad will not get warm.

(2) Ice Test

Place a small chunk of ice between two layers of Eagle Insulation. Then play the flame of a blow torch over the wool for a few minutes. Remove the insulation and you will find the ice practically unaffected by the terrific heat of the torch.



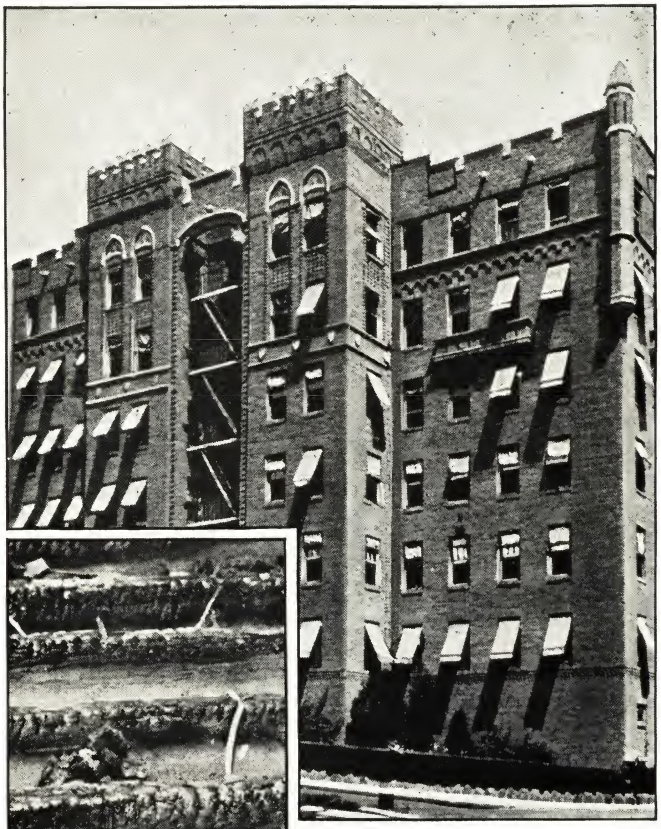
(3) Fire-Retarding Test

Put a 1- or 2-in. layer of Eagle Insulation in a shallow cardboard box. Play the flame of a blow torch on top of the wool as long as you please. The fire does not reach the cardboard bottom of the box—does not even scorch it.

(4) Moisture-Repellence Test

Dip a wad of Eagle Insulation into a glass of water. Note that it sheds water like a duck's back. Take a box of Eagle Insulation and make a slight indentation in the surface of the wool. Pour a few drops of water into this indentation. Notice how the water stays on top—rolls around like beads of mercury on glass.

For free sample of Eagle Insulation, write THE EAGLE-PICHER SALES COMPANY, *Cincinnati, Ohio, or see your local Eagle Insulation Contractor*



Flames Cheated in Spectacular Blaze

The Parkway Towers Apartment, East Yonkers, N. Y., where crossed wires recently started a roaring roof fire.

Flames were kept from spreading to the apartments below by a thick layer of Eagle Insulation between ceiling beams in all top floor apartments. The roof itself was almost destroyed (see close-up) but top floor ceilings were not even scorched.

Air Conditioning Costs Slashed

The Paramount Theater, Montgomery, Ala., where Eagle Insulation was recently installed. This efficient insulation actually reduced the cost of electricity used for refrigeration 40% during one summer season—saved $941. After insulation, the theater could be kept cool on the hottest days. This was impossible before insulation. Repair bills were reduced, and anticipated life of the cooling machinery increased approximately 50%. Fuel consumption during the first winter season was cut 24 tons.

Stands Up Under a Blow Torch

You would think the man holding this handful of Eagle Insulation would be painfully burned—with a blow torch playing on the insulation. Not at all. His hand is not even warm. The barrier against the transference of heat provided by Eagle Insulation results in substantial fuel savings in Eagle Insulated homes. Fuel savings generally are as much as 40%.

Snow Melts Slowly on an Eagle Insulated Roof

Here is a case where you can actually see how Eagle Insulation cuts down fuel bills. One of these homes is insulated—one is not. Furnace heat leaks out through the roof of the uninsulated house, quickly melting the snow. A thick layer of Eagle Insulation under the roof of the other house keeps furnace heat inside where it belongs, so that it does not cause the snow on the roof to melt rapidly—a sign of efficient insulation.

Eagle Insulation Easily Installed in Frame, Brick Veneer and Stucco Houses, Without Construction Alterations

SPECIFICATIONS

Type H-1 Home Insulation (Applied Pneumatically)

Specifications for Application

Note: These specifications are intended to cover the most common types of installations. For specific recommendations concerning any insulating project, write to THE EAGLE-PICHER SALES COMPANY, Insulation Division, Cincinnati, Ohio.

Work Included

The work contemplated under this specification shall include all materials, labor, equipment and service necessary for and reasonably incidental to the installation of Eagle Home Insulation by the pneumatic method to completely insulate the portion of the building as shown and noted on the drawings or herein specified.

This contractor shall make all openings required to execute his work and shall do all patching of such openings after his materials have been installed. He shall furnish and set all work not included by other contractors, which may be required in connection with the installation of his materials.

(Insert here detailed specification applying to the particular job.)

Work Not Included

Other contractors will furnish and install the following work as specified under other divisions and other specifications text which this contractor shall read so as to ascertain what is called for therein: (The paragraphs which do not apply to the job at hand are to be omitted.)

(a) Furnish and erect all metal or wood lath, insulating lath or plaster lath as specified, on all walls which are to be insulated and finished with plaster, as specified under..... (state where specified).

If metal or wood lath, such lath adjoining ceiling, window sills, etc., on all exterior walls to be insulated will be temporarily secured so that the home insulation contractor may readily remove it to allow the installation of his material. The home insulation contractor will replace and secure such lath.

Materials and Workmanship

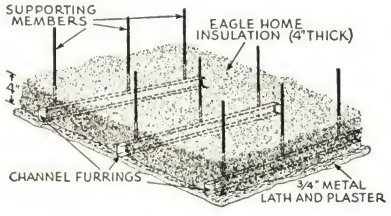
All insulating materials placed under this specification and contract shall be those manufactured by THE EAGLE-PICHER SALES COMPANY and shall bear the manufacturer's label. The insulation material shall be installed to a uniform density by the pneumatic method, except in areas where this method is impracticable or impossible. In such areas the insulation material shall be placed by hand. All insulation material shall be installed by ..... of..... (State name and address.)

Detailed Specifications to Be Inserted Under "Work Included" Where Indicated

No. 1 Finished Attics

The insulating material shall be installed in attic spaces as follows:

The authorized Eagle-Picher contractor shall apply continuously to backs of studs of knee walls, Sisalkraft or Diamond Cord Paper, secured in place.



Eagle Insulation shall be installed between ceiling beams over ..... (state) story to extend from exterior walls to base of knee walls, up knee walls to intersection with rafters and up rafters to and across attic ceiling, etc. It shall also be installed in all gables, dormers and closets which adjoin finished attic portions, to provide a continuous blanket of insulation over entire roof area. The insulation shall be installed to a depth of not less than 3⅝ ins. between ceiling beams and to the full depth of studs in knee walls and gables, etc., and the full depth of rafters.

No. 2 Unfinished Attics

(Insulation to be installed between rafters to a depth of not less than 3⅝ ins.)

Eagle Insulation material shall be installed in attic spaces as follows:

The authorized Eagle-Picher contractor shall apply between all rafters over entire roof area, Sisalkraft or Diamond Cord Paper, secured in place not less than 3⅝ ins. from underside of roof sheathing or single lath. He shall also supply to studs in gable ends, similar paper secured in place and so installed as to allow the placing of the insulating material behind it to a thickness of not less than 3⅝ ins.

Eagle Insulation shall be installed between rafters and between studs in gable ends, etc., to provide a continuous blanket of insulation over entire roof area. The insulation shall be installed to a thickness of not less than 3⅝ ins.

No. 3 Unfinished Attics

(Insulation to be installed between rafters to their full depth.)

Eagle Insulation shall be installed in attic spaces as follows:

The authorized Eagle-Picher contractor shall apply to underside of rafters and to face of studs in gable ends, a suitable wall board, celotex or masonite board secured in place. (If joints are to be battened, so specify.)

Eagle Insulation shall be installed between rafters and between studs in gable ends, etc., to provide a continuous blanket of insulation over entire roof area. The insulation shall be installed to full depth of the rafters and full depth of the studs.

No. 4 Unfinished Attics

(Insulation to be installed between ceiling beams to a depth of not less than 3⅝ ins.)

Eagle Insulation shall be installed in attic spaces as follows:

Eagle Insulation shall be installed between ceiling beams to provide a continuous blanket of insulation over entire ceiling area of ..... story (state first, second, or third). The insulation shall be installed to a thickness of not less than 3⅝ ins.

No. 5 Exterior Walls

(New construction. Metal or wood lath on wood frame.)

Eagle Insulation shall be installed in all exterior walls [except.....(state exception if any).....] to completely fill such walls from top of foundation wall to roof.

The insulation shall be installed to completely and thoroughly fill to a uniform density all walls specified. If insulation is to be installed before plaster is applied, the contractor shall partially cover each space between two studs during the time it is being filled, with a sheet of insulating board, of sufficient width to span the studs and provided with a hole near the upper end to receive the nozzle of the blowing equipment.

No. 6 Exterior Walls

(New construction. Gypsum plaster lath or insulating plaster lath, etc., on wood frame.)

Eagle Insulation shall be installed in all exterior walls, [except.....(state exceptions if any).....], to completely fill such walls from top of foundation wall to roof.

The insulation shall be installed to completely and thoroughly fill to a uniform density all walls specified.

No. 7 Suspended Ceilings

Eagle Insulation shall be installed over suspended ceilings by the pneumatic process to a depth of 4 ins. and a uniform density (see drawing above).

EHRET MAGNESIA MANUFACTURING COMPANY

VALLEY FORGE, PA.

NEW YORK PHILADELPHIA CHICAGO

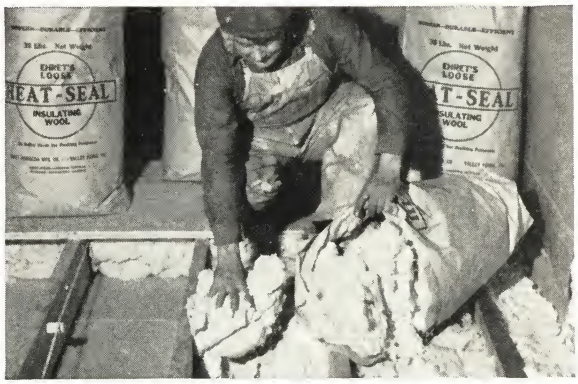
For Ehret's 85% Magnesia Insulations, see File Index

THREE TYPES OF EHRET'S HEAT SEAL INSULATING WOOL

For Homes and Building Structures

Ehret's Heat Seal Insulating Wool is a most effective heat saver. Containing only finely fiberized natural mineral materials, it is absolutely fireproof, non-corrosive, will not mold or decay, is odorless and completely vermin-proof. It is of very soft texture and perfectly free from sharp particles and dust.

Besides preventing loss of heat in cold weather, it will keep out the heat of summer. It will soundproof against noise, either from outside or inside of the building or room. Completely filling enclosed spaces, it blocks off air flues and forms a very definite fire retarder. Lath marks on ceilings and walls will not occur if the spaces back of them are filled with Ehret's Heat Seal Insulation.



Ehret's Heat Seal Insulating Wool, Loose Type, Can Be Easily Worked and Packed

Loose Wool

Loose Wool is so prepared that it can be easily worked and applied by hand. It may be packed into open joist spaces where it will cling and remain in position. Lath, flooring or wall board is then placed over it. This feature means a considerable saving in cost over the bat type. It is best when packed to a density of 10 lbs. per cu. ft. It has a covering capacity of 2400 sq. ft. one in. thick per ton.

It is furnished in burlap or paper bags containing 35 lbs. each.

Granular Wool

Granular consists of individually formed nodules or pellets which can be freely poured, hand packed or blown into spaces. It is especially recommended for filling in between joists over ceilings. One ton has a capacity of 3000 sq. ft. one in. thick of a density of 8 lbs. per cu. ft.

It is supplied in paper bags containing 40 lbs. each, or in burlap bags containing 35 lbs. each.

Wool Bats

Ehret's Heat Seal Wool Bats are of two types, regular and waterproofed. The Waterproofed Bat is rigid and will withstand all soaking tests. They have a compact felted construction of sufficient thickness to completely fill the spaces between 2x4 in. studding. Cut into blocks measuring 15x23 in. and 15x48 in., they will snugly fit between studding spaced on either 16 or 26 in. centers. Also furnished in 15x18 in. size if requested. They are easily handled and installed.

The regular type bats can be furnished 2 in. thick in 15 in. by 108 in. size. However the 2 in. thickness is not recommended for sufficient insulation.

The regular type bats can also be supplied compressed and will expand out to the wall thickness when installed. This type is Ehret's "Wool Packs," It is shipped in 12x15 in. pieces and in 15 in. wide by 108 in. long rolls, 2 in. thick.

RECOMMENDATIONS

Exterior Walls

New Construction—The walls should be completely insulated from the foundation to the roof. Loose Wool is to be preferred. Before lath or wallboard is placed, pack the loose wool against the sheathing, filling the entire space up level between the studding. The wool should be tamped until the whole is of a uniform density.

Bats may be used, if desired, in which case the irregular spaces must be carefully filled with specially cut and fitted pieces.

Old Buildings—Use the Granular form. This can be blown in at top of the wall spaces through openings formed by removing clapboards or other small sections of exterior surface materials.

Interior Partitions

New Construction—After the lath or wall board is placed on one side of the studding, Loose Wool or Bats can be installed in the same manner as for exterior walls.

Old Buildings—Granular Wool should be blown in through narrow openings made in one side of the partition, at the tops of the joist spaces.

Floors—Interior and Attic

New Construction—Loose Wool, packed in, or Granular, poured in, is recommended. The work being done before the flooring is laid.

Old Buildings—Granular should be blown in through openings made by removing occasional boards.

Roofs—Sloping

New Construction—Where the underneath side of the roof is unfinished apply Bats for both new construction and old buildings. A continuous retaining surface of wallboard should then be nailed over the studding. The bats fit so snugly between the rafters that they will stay in position until the wallboard can be nailed on. For those portions of roofs which may slope down below the attic floor, fill in with Granular.

Old Buildings—If the underneath side of the roof is finished, remove a row of shingles on each side of the ridge and blow in Granular Wool.

Roofs—Flat

Where the underneath side is unfinished, apply Bats for both new construction and old buildings. A continuous supporting surface of wall board should then be nailed to the rafters.

Where the underneath side is finished, Bats can be applied in new construction before the lath is nailed on. For old buildings, openings can be made through the roof and the Granular form blown in.

Attic Rooms

For new construction or old buildings the top area, over the ceiling, can be filled with Granular. The side, or knee walls, can be insulated with Loose Wool or Bats, with a continuous retaining surface of wallboard, or other material, nailed to the studding.

Dormers

If unfinished, insulate the heads with Bats. If finished, use Granular Wool blown in.

Suspended Ceilings

For new or present construction, pour or hand pack into the upper surface a 4-in. thick layer of Granular Wool.

THE FLINTKOTE COMPANY

50 West 50th Street, NEW YORK, N. Y.

BRANCH OFFICES

ATLANTA, GA., 1215 Sylvan Road, S. W.
BOSTON, MASS., 826 Park Square Bldg.
CHICAGO, ILL., 624 So. Michigan Ave.
DETROIT, MICH., 14201 Schaefer Highway
NEW ORLEANS, LA., Poland and Galvez Sts.
WACO, TEX., 402 Superior Life Bldg.

For Flintkote Asphalt and Asbestos Shingles and Sidings, Roll and Built-up Roofings, Insulation Board Products, HardBoard and Asphalt Emulsions, see File Index

FLINTKOTE ROCK WOOL INSULATION

Characteristics—Rock Wool is manufactured by a process of blowing molten rock into a fibrous mass with steam under pressure. It is white in color and similar in appearance to fluffy cotton. Rock wool is entirely non-combustible and is approved by the City of New York for fire retarding stair-hall partitions. The thermal conductivity of rock wool insulation for calculating purposes as listed in the "Guide" of the A. S. H. V. E., is .27 B.t.u. per hour, per square foot, per inch thickness, per degree Fahrenheit difference in temperature.

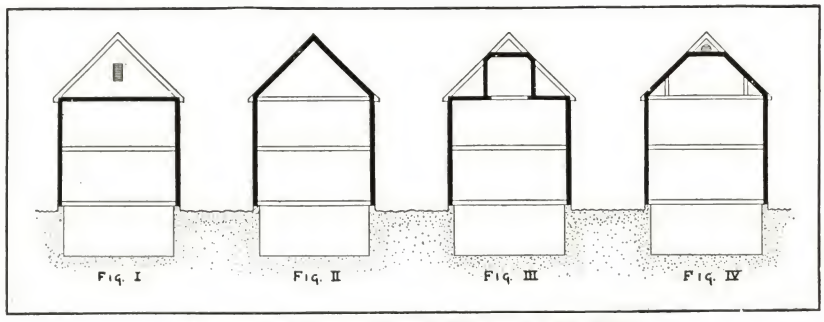
Types—Four types of wool are manufactured for various purposes: (1) Long Fibre for hand packing; (2) Granulated (nodulated) for pneumatic installation; (3) Bats (with and without paper backing), preformed parallelopiped shapes for convenient installation between studs, and (4) Strip Form (in rolls). Rock Wool is non-corrosive and will not support any form of life, such as rodents, vermin, termites, etc. The acoustical properties of Rock Wool are excellent. Wool Bats and Long Fibre Wool are self-supporting in vertical walls.

General Installation Information

Successful performance of Rock Wool insulation in a house depends primarily upon its location. At right are drawings of a typical house showing Flintkote Rock Wool insulation installed to best advantage. All enclosed air spaces which are uninsulated should be ventilated by louvers. Water lines which are located in uninsulated portions of the building should be protected from freezing. The same principles of sealing upper floors, as shown, also apply to apartment house installations and other types of buildings.

Where attic is unheated, insulation should be installed in all outside walls between studding and between open joists in the floor of the attic as in Fig. I. Ventilation through louvers should be provided. This method is the most commonly used and is the most economical.

When top floor is heated, insulation should be installed as shown in Figs. II, III, or IV. In all such installations, the gable ends should also be insulated. When attic rooms are small, installations as shown in Fig. III are desirable. Fig. IV illustrates method recommended when attic rooms are large, space under eaves is used for storage purposes, or climatic conditions are severe. The space above attic ceiling should be ventilated, if possible.



Methods of Insulating with Flintkote Rock Wool

Long Fibre Wool should be packed by hand to a density of 2 to 2½ lbs. per sq. ft. wall thick (3⅝ in.). When packed by competent workmen, it is entirely self-supporting in vertical areas.

Bats are easily installed by hand and are made to fit standard stud spacing. They can easily be cut to fit any odd shaped spaces that may occur under windows or braces. Furred wall areas should be backed up or faced with paper or wall board. Bats may be held in place between roof rafters by the use of wire netting, wall board or wood lath.

Granulated Wool in existing houses should be installed by a Flintkote Certified Home Insulator.

Strip Wool is easily installed by unrolling the wool between the studs or joists.

PRODUCT DATA—FLINTKOTE ROCK WOOL INSULATION*

Product	Use	Size	Package	Net Contents	Approximate Coverage
Dura Wall Thick Bats (Waterproof wool with waterproof paper backing provided)	New Houses: Walls Ceilings Roof slopes Existing Houses: Unfinished attics	15″ x 48″ 15″ x 23″	4 Bats per carton 8 Bats per carton	20 sq. ft. 19.2 sq. ft.	21 sq. ft. 20½ sq. ft.
Standard Wall Thick Bats (Waterproof wool—No waterproof paper backing)	New Houses: Walls Ceilings Existing Houses: Unfinished attics	15″ x 23″	8 Bats per carton	19.2 sq. ft.	20½ sq. ft.
2-in. Thick Bats (Waterproof wool in half thickness where lowest cost is necessary)	New Houses: Walls Ceilings Existing Houses: Unfinished attics	15″ x 23″ x 2″	12 Bats per carton	28.8 sq. ft.	30½ sq. ft.
Strip Wool (A convenient form for easy installation)	New Houses: Walls Ceilings Existing Houses: Unfinished attics	15″ x 9′ x 2″	2 Rolls per bag	22½ sq. ft.	24 sq. ft.
Long Fibre Wool (Loose wool for hand packing)	New Houses: Walls Ceilings Existing Houses: Open ceilings	Bulk	Kraft double liner paper bags	*Weight* 35-lb. bags	17 sq. ft.
Granulated Wool (Primarily for pneumatic installation)	New Houses: Ceilings Existing Houses: Walls Ceilings Roof slopes	Bulk	Kraft double liner paper bags	40-lb. bags	20 sq. ft.

*Subject to change without notice.

GENERAL INSULATING & MFG. CO.

Manufacturers of House Insulation and a Complete Line of Pipe Coverings and Industrial Insulating Materials

EXECUTIVE OFFICES
ST. LOUIS, MO.

ENGINEERING OFFICES AND MAIN PLANT
ALEXANDRIA, IND.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

The natural resiliency of Gimco Sealal Bats holds them securely in place without artificial support.

Low Application Cost

Gimco Sealal Bats are much easier and quicker to install than ordinary bats. They need only to be pushed between studdings or joists. Their own natural resiliency holds them permanently in place without additional support. Where a good insulation of slightly less than standard wall thickness is desired, Gimco No. 200 Rollbats are ideal.

Gimco SEALAL ROCK WOOL BATS MADE BY SPECIAL ANNEALING PROCESS

It is a well-known fact that next to a vacuum, dead air, which cannot circulate, provides the best insulation known to science. That is why Gimco engineers developed the patented Gimco annealing process. It gives Gimco Rock Wool unusually long, tough fibres and a volume which consists of more than 90% tiny "dead air" cells!

"Wall-thick" Insulation Provides Maximum Efficiency

Gimco Sealal Bats completely fill empty spaces between studdings and joists. They can easily be cut to fit any irregular spaces.

Gimco Rock Wool provides the greater protection which only a "wall-thick" insulation can give . . . its efficiency (conductivity .067 b.t.u.'s installed 3⅝ in. thick) is, we believe, unsurpassed by any other building insulation. Gimco keeps a home up to 15° cooler in summer, and in winter, makes it easier to maintain a uniform warmth throughout the house. In addition, Gimco keeps *more* furnace heat inside and enables homeowners to save up to 50% of their winter fuel bills!

Gimco Rock Wool Is Fireproof—Permanent

Gimco is as fireproof as the rock itself. It provides an effective barrier against spreading fires. Then too, it resists moisture and will not decay, pack down or dust out. It is as permanent as the house itself. Being inorganic, it offers no attraction to vermin or termites.

Shipping Data Specifications

Sealal Bats are placed over top floor ceilings between the joists. Being extremely light, they cause no strain whatsoever on ceiling plaster.

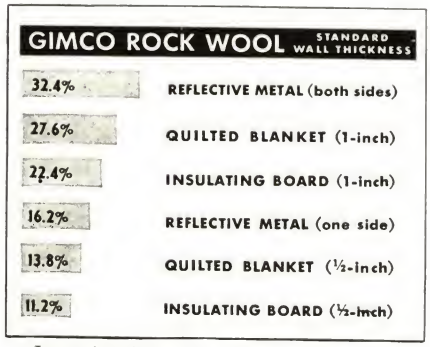
Gimco Sealal Bats are available in three sizes either with or without waterproofed paper backing. (1) 15 in. x 18 in. x wall thick; (2) 15 in. x 23 in. x wall thick; (3) 15 in. x 48 in. x wall thick. Average density: 4¾ lbs. per cu. ft. Shipped in cartons, 10 bats to a carton. 10 small bats insulate approximately 20 sq. ft. of wall or ceiling area; 10 medium size bats insulate approximately 25½ sq. ft.; 10 large bats insulate approximately 55 sq. ft.

Packed in neat individual cartons, Gimco No. 200 Rollbats are 9 ft. long, 15 in. wide, and can be fluffed to approximate wall thickness. Heavy waterproofed paper is fastened to one side of the strip, and a flange of the paper extends out 1½ in. along both sides

Gimco Is Easily Blown Into Existing Homes

For modernization of present homes, Gimco Rock Wool in granulated form can easily be installed in empty wall and ceiling spaces. Openings are made in the walls, and the wool is blown in under pneumatic pressure. (See cut at left.) There is no dirt or disturbance of any kind. Trained workmen complete each job quickly. Afterwards, the openings are sealed up leaving no traces of the work that was done. Insulation is applied to the attic by blowing the wool to a depth of 4 in. between the joists.

Gimco Rollbats are easily installed and provide maximum efficiency for this type of insulation.



Length of bars in above chart shows resistance to passage of heat offered by other materials in comparison with Gimco.

JIFFY MANUFACTURING COMPANY

Jiffy Blanket House Insulation and Sound Reducing

FACTORIES

BOSTON, MASS. NEW YORK, N. Y.

NATIONAL SALES DIVISION

P. C. LEONARD COMPANY, 137 Newbury Street, BOSTON, MASS.

Uses

Heat Insulation—Jiffy Blanket in walls, ceilings, and roof effectively insulates all types of buildings, keeping them cooler in summer, warmer and more economical to heat in winter.

Sound Reducing—Properly installed in partitions and floors Jiffy Blanket possesses high efficiency for reduction of sounds carried through ordinary uninsulated construction.

Description

Paper (the best known insulator) is lacerated (*pulled* apart, not cut) into fibrous flakes forming a mass of air cells having great heat insulating value. These are mixed with effective flameproofing material and drifted between two layers of heavy flameproofed Kraft paper which have been thoroughly coated on the inside with melted asphaltum. Jiffy is then sealed around all edges and at 16-in. intervals across each strip.

Absolutely Moistureproof—Jiffy Blanket's excellent insulating value is completely and permanently protected against hazards of wind and moisture by this one reliable method used by architects and builders to weatherproof houses—asphalt and paper.

Divides the Air Space—Jiffy Blanket is made to accurately divide the air space, conforming to practice recommended and used by leading engineers.

Tests

Copies of tests for conductivity made by Prof. Gordon B. Wilkes at M.I.T.; and for sound reducing made by Dr. Wm. R. Barss in his laboratories at Cambridge, Mass. will be sent on request.

Insulating Value

Thermal—(*Note: Single thickness—approximately 7/16 in.*) Coefficients of heat transmittance (B.t.u./hr./sq. ft./1° F.)

Standard wall alone—clapboards, paper, sheathing, air space, lath, plaster, "U" value .26.

Same wall insulated with:

Single thick Jiffy, flameproof kraft cover..... .135
Single thick Jiffy, aluminum coated flameproof kraft cover..... .124
Double thick Jiffy, flameproof kraft cover..... .109

Sound—Jiffy Blanket, installed the usual way between studs, proves effective as an economical and practical sound reducer.

The addition of 1, 2, 3 and 4 thicknesses of Jiffy Blanket to a standard double wall partition gives the following reductions in decibels over the same wall without Jiffy Blanket:

Frequency	Thickness of Jiffy Blanket, in.			
	1	2	3	4
128	2.1	3.6	4.1	4.7
256	4.0	5.8	6.8	7.3
512	4.8	5.5	6.5	6.5
1024	3.6	7.0	8.1	8.6
2048	7.0	7.5	8.2	8.6
Average	4.3	5.9	6.8	7.2

From experimental work on reduction of loudness due to reduction of noise level in decibels it has been found that reduction in decibels according to above table, starting with an original sound level of 29.5 decibels, will give the following percentage reduction in loudness:

Single thick Jiffy, 55%.
Double thick Jiffy, 69%.
Triple thick Jiffy, 74%.
Four thicknesses Jiffy, 76%.

Jiffy Blanket Features

Jiffy embodies all the desirable features of a good insulation. Ask for a sample and make your own tests. Jiffy Blanket is windproof, waterproof, moistureproof, verminproof, flameproof; clean; durable; easy to install.

SPECIFICATIONS

To fit studs measuring center to center	Use blanket size No.	Linear feet per carton single thickness	Square feet per carton
10 in.	10	100	100
12 in.	12	100	117
14 in.	14	100	134
16 in.	16	100	150
18 in.	18	100	167
20 in.	20	100	184
22 in.	22	100	200
24 in.	24	100	217
28 in.	28	100	250
32 in.	32	100	284
36 in.	36	100	317

Shipped single thickness, install double thickness for best results.
Weight: single thickness,—250 lbs. per 1000 sq. ft.
Packing strips—for packing around window and door frames, and all narrow spaces, size 5 x 48 in. Carton—100 strips. Standard Jiffy construction and features.

Measuring For Bill of Materials

(1) Determine total linear feet required in each width.
(2) Multiply by two for double thickness.
(3) Adjust to nearest carton.
(4) Convert to square feet.
Order by cartons of each required size.

Application

Jiffy Blanket is easy to install, one reason for its popularity among carpenters, builders, and home owners. No skin irritation; no mess; a simple nail and hammer proposition.

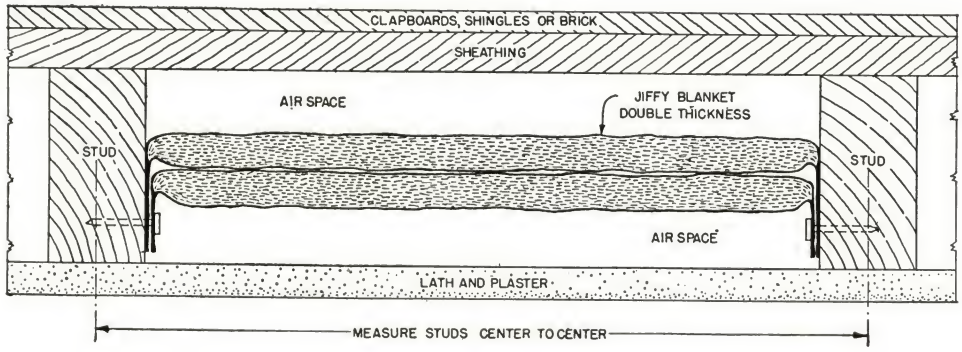
The range of widths saves time, avoids waste; no cutting or chopping to fit stud spaces. Cut for length along the nearest cross seal. With Jiffy you never have to cut through the insulating pad to fit small odd shaped spaces. Fold it instead. Those important inside flakes which do the insulating need never be exposed to wind and moisture.

Cut Jiffy to proper length. Fold to thickness desired. Using selvage as handle, press Jiffy between studs, joists, or rafters, until selvage edge comes flush with face of stud. This correctly divides the air space and is the easiest way to handle Jiffy. Nail the selvages at intervals of 6 to 8 ins.

Jiffy Blanket installed between rafters in roof slopes, and other overhead areas not strapped, should be supported by lacing a light wire back and forth under it.

For Attention

When you want information or assistance you want it prompt and practical. Our organization is founded on that understanding. Look for "Jiffy" in your local telephone book, or write headquarters for action.



JOHNS-MANVILLE

EXECUTIVE OFFICES
22 East 40th Street, NEW YORK, N. Y.

Products

JOHNS-MANVILLE HOME INSULATION.

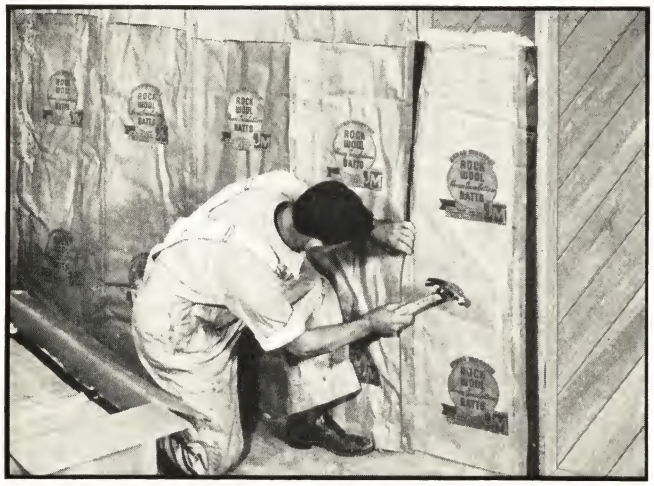
For the following Johns-Manville products see File Index: Acoustical Treatment and Sound Isolation; Asbestos and Asphalt Shingles; Built-up Roofs; Insulated Roofs; Insulating Board and Insulating Lath; Pipe Coverings and Insulations; Tile Flooring; Transite Sheets and Ventilators; Asbestos Wainscoting and Flexboard; Steeltex for Plaster, Stucco and Brick or Stone Veneer; Steeltex Floor Lath; Transite Walls for office partitions; Welded Wire Reinforcement.

J-M ROCK WOOL HOME INSULATION

Johns-Manville Home Insulation is a light, fluffy rock wool that is unsurpassed for the heat-proofing of practically any building, old or new. Because it is a natural non-conductor of heat, and because it prevents air circulation by filling the hollow spaces inside of the walls, J-M Rock Wool checks all three types of heat transmission (radiation, convection, conduction). It is a permanent, rot-proof, odorless material that will not burn.

Four inches of this material are equal, in resistance to heat and cold, to a solid stone wall 11 ft. thick. As a result, when used to insulate a home completely, it has reduced fuel bills, in typical cases, as much as 30%, and has made upper rooms up to 15° cooler than before insulation. It is made in three forms, Types A, B and C.

J-M Type B Rock Wool Home Insulation
A highly efficient insulation that is permanent, rot-proof, and quickly and economically installed



J-M Type B Batts in new construction
Installed in all exterior walls as well as across the roof or top floor ceiling

We invite you to bring your home insulation problems to us. The experience gained in the insulation of over 250,000 homes with J-M Rock Wool enables us to answer every requirement in the insulation of new or existing homes.

Types B and C (For New Construction)

Type B Home Insulation is furnished in the form of resilient, pre-fabricated batts of uniform density, both full stud thickness and semi-thick, in sizes 15x23 and 15x48 in. (designed to fill completely the width between studs, joists or rafters spaced 16 in. center to center).

To one face of the batt is affixed heavy waterproof paper with a folded flange along each of the two long sides of the batt.

This waterproof membrane not only protects against the penetration of moisture from wet plaster, but also adds greatly to the handling qualities of the batt. In addition, it provides a 1½-in. flange on each side of the batt which, when folded over the stud and tacked down, adds to the protection against air and moisture. At the same time it forms a convenient method of holding the batt in place on overhead work.

Continuity of insulation in odd-shaped spaces is secured either by the application of pieces cut from a Type B batt in appropriate sizes for tight closure of the open space, or by the use of Type C in these special areas.

J-M Type B Rock Wool Batts in new homes
Efficient, fireproof, economical

Type C Home Insulation is furnished in pieces 8x15 in., full stud thickness, without the waterproof paper backing.

These pieces can readily be pressed between studs, ceiling beams or roof rafters and can easily be sawed, cut or even torn with the hands, to fit around windows doorways, pipes, plumbing stacks, outlet boxes, etc.

The convenient size of Type B batts enables the workman to cover large areas quickly and economically. Further, J-M Type B and Type C Home Insulation give the home owner fullest protection against heat loss, for this material consists of units of uniform thickness and density, and cannot be installed in such a manner as to leave voids or thin spots to waste heat. In addition, they provide added security from fire.

Due to the reduced heat losses through the walls and roof which J-M Home Insulation effects, smaller radiators and smaller heating plant and piping can be installed. In typical cases it has been proved that by complete insulation with Type B and Type C Home Insulation, the total steam or hot water radiator requirements may be materially reduced from that required in uninsulated constructions.

Walls of existing structures are insulated in this manner
Even brick and stucco offer no problem

Type A (For Existing Walls and Inaccessible Attics)

For insulating the walls and finished attics of existing homes, J-M Type A Home Insulation is recommended. Type A Home Insulation is nodulated rock wool, which, when blown into the wall and attic spaces under pneumatic pressure, fills every nook and cranny with heat-resistant material. It can be installed in any frame building with wood, brick veneer, or stucco finish.

In the Type A form, the rock wool is blown by compressed air into the spaces between studs in outer walls, between beams or rafters in attic floors and elsewhere as required to enclose the entire occupied area of the structure.

Home Insulation is blown only at low pressures (usually 2 lbs. per sq. in. or less). The pressure accomplishes two desired effects: It gives a dense, even pack (approximately 7 to 8 lbs. per cu. ft.) which insures maximum thermal efficiency; and it puts the material under an initial compression so that any subsequent vibration or building movement will not cause the insulation to sag, but, rather, to expand and thus retain its full insulating value. The A.S.H. & V.E. Guide conductivity figure for Rock Wool is given as 0.27 B.t.u. at a mean temperature of 90° F. and 10-lb. density. At 7 to 8-lb. density, this figure is conservative, since, within certain limits, conductivity is only slightly reduced by lighter density.

Type B Batts in new or old construction
Top floor ceilings are rapidly insulated

Since the house is already erected, the blowing is done from outside—a brick, clapboard or shingle being removed temporarily, where necessary, for insertion of the nozzle of the hose conveying the rock wool.

J-M Approved Home Insulation Contractors

Proper application is just as important in insulating existing homes as is the material itself. For this reason, Approved Home Insulation Contractors who have the necessary equipment, have been selected in every community by Johns-Manville as qualifying in experience and business integrity to carry the J-M franchise. These companies are equipped to furnish and install Home Insulation in a thoroughly competent manner.

The work is done from the outside, thus eliminating litter or disturbance inside the house. The usual home activities continue without interruption. Shrubs, trees and lawns are protected where necessary. All work is done by well-trained, experienced, courteous men.

We shall be glad to give you the name of the Approved Home Insulation Contractor in your neighborhood.

J-M Home Insulation crew "blowing" an occupied frame house
Johns-Manville developed the blowing machine which first made it possible to insulate existing buildings with Rock Wool, and has insulated over 250,000 American homes by this method

Specifications for J-M Rock Wool Home Insulation installations are given on the following page

SPECIFICATIONS FOR J-M ROCK WOOL HOME INSULATION

Type A (Installed Mechanically)

Work Included

The work contemplated under this specification shall include all materials, labor, equipment and services necessary for, and reasonably incidental to, the installation of Johns-Manville Home Insulation to insulate completely the portions of the building as shown and noted on the drawings or herein specified.

This contractor shall make all openings required to install his work and shall do all patching of such openings after his materials have been placed. He shall furnish and set all work not included by other contractors which may be required in connection with the installation of his materials.

(Insert here detailed specifications applying to the particular job.)

Work Not Included

The following work will be furnished and installed as specified under other divisions of the specification, which this contractor shall read to ascertain what is called for therein:

All metal or wood lath, insulating lath or plaster lath as specified, on all walls which are to be insulated and finished with plaster. If metal or wood lath, such lath adjoining ceiling, window sills, etc., on all walls to be insulated shall be temporarily secured so that the Home Insulation Contractor may readily install the material Subsequent replacement of lath by others.

Materials and Workmanship

All insulating materials placed under this specification and contract shall be those manufactured by Johns-Manville Corporation and shall bear the manufacturer's label. In confined areas the insulating material shall be installed by the pneumatic method. In areas which are readily accessible for hand application, the insulation may be installed by that method, using the Type B Batts or Type C Home Insulation. All insulating material shall be installed by the *(state name and address of the Home Insulation Company).*

Type B (Installed by Hand)

(Since the furnishing and applying of Home Insulation in this form may be made a part of the Carpentry Specification, the following paragraphs have been prepared to be so included. To this specification is to be appended the proper paragraph or paragraphs selected from the Detailed Specifications given below which are applicable to the particular job.)

The Contractor shall furnish and install Johns-Manville Ful-Thik Home Insulation, Type B, to insulate completely the portions of the building as shown and noted on the drawings or herein specified, placed in accordance with the Manufacturer's printed instructions entitled "Directions for Applying Johns-Manville Rock Wool Home Insulation, Type B."

(Insert here detailed specifications applying to the particular job.)

DETAILED SPECIFICATIONS

No. 1—Finished Attics

The insulating material shall be installed in attic spaces between rafters, between attic ceiling joists, between studs in gable ends and in dormers which adjoin finished attic portions, to provide a continuous blanket of insulation over entire roof area.

No. 2—Unfinished Attics

(Insulation installed between rafters)

The insulating material shall be installed in attic spaces between rafters and between studs in gable ends, etc., to provide a continuous blanket of insulation over the entire roof area.

No. 3—Unfinished Attics

(Insulation installed between ceiling joists)

The insulating material shall be installed between ceiling joists to provide a continuous blanket of insulation over entire ceiling area.

No. 4—Exterior Walls*

Wood Frame Construction

The insulating material shall be installed in all exterior walls to fill such walls completely from top of foundation to roof to provide a continuous blanket of insulation surrounding the occupied portion of the house.

No. 5—Exterior Walls*

Solid Masonry Construction

The insulating material shall be installed in all exterior walls in the spaces between the furrings (which spaces shall be not less than 2 in. deep) from top of foundation to roof to provide a continuous blanket of insulation surrounding the occupied portion of the house.

Note: The inner face of the exterior walls shall be waterproofed, by others, before the insulating material is installed.

*If a garage is attached to, or is under, the house the following should be added:

The insulating material shall also be installed in all walls between the garage and the house.

or

The insulating material shall also be installed in the ceiling of the garage.

If there are heated portions of the house projecting beyond the main walls, as for example, over an open porch, etc., the following should be added:

The insulating material shall also be installed between the floor joists under all heated portions of the house which are exposed on the underside.

METHOD OF INSTALLING TYPE B HOME INSULATION

General Instructions

Johns-Manville Type B Home Insulation is rock wool in convenient batt form for easy installation between open studding, rafters, or joists. The batt has a sheet of waterproof paper on one face extending 1½ in. on the long sides (See Fig. A).

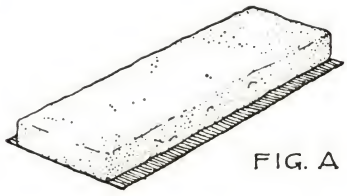


FIG. A

Care shall be taken to leave no heat-leaking voids or crevices. Butt the batts snugly together. Odd-shaped areas are insulated by cutting or tearing a part of the rock wool from the full batt. Care must be taken to leave paper on the remainder of the batt to provide for the lap.

(For closed, inaccessible spaces, Type A Home Insulation, applied pneumatically, is recommended).

Directions for removing batts from carton: Place the carton on the floor with the side marked "top" facing up. Slit the carton and, with flaps opened, turn carton over, gently emptying contents. Slide fingers under the sides and near the far end of the batt, with thumbs on top of paper backing. Grasp firmly both the rock wool and paper backing, lift from pile and set in place.

Where to install Type B Home Insulation

The purpose of insulation is to keep heat in or out of the living portion of the house. If the attic is unfinished and not used for living quarters, it is obviously better to stop the heat flow at the attic floor line instead of at the roof. The following sketches indicate where insulation should be installed for best results.

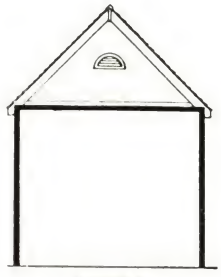


FIGURE B

In a house with an unfinished attic, Type B Home Insulation may be installed in outside walls and between the top story ceiling joists, as shown in Fig. B.

Where the presence of an attic floor makes the above procedure impractical, the batts should be installed between the roof rafters, as indicated in Fig. C, and between the studding in the gable ends.

FIGURE C

An attic which contains a heated room should be insulated by installing the batts between the rafters and ceiling joists, as shown in Fig. D.

Where the batts are to be installed in the furred spaces (which spaces must be not less than 2 in. deep) behind masonry construction, the inner face of such masonry should be waterproofed before the application of the insulation.

If a garage is attached to, or is under, the house, the batts should be installed in all walls between the garage and house, or in the ceiling of the garage

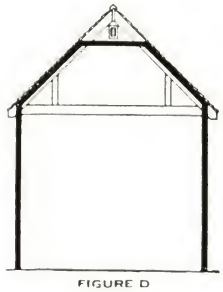


FIGURE D

If there are heated portions of the house projecting beyond the main walls as, for example, over an open porch, etc., the batts should be installed between the floor joists under all heated portions of the house which are exposed on the underside.

Attics and all similar spaces which are outside the insulated portions of the house (for example, where the insulation is installed between the ceiling beams, under the attic floor) should be adequately ventilated, where modern tight roof construction is employed, by being connected with the outside air through louvres or similar means, such louvres being provided at opposite ends of such spaces so there will be cross ventilation. Protection against freezing should be provided on pipes and other equipment containing water which are located in these spaces.

How to install Type B Home Insulation

Between Studs—In insulating exterior walls the batts should be installed between the studs from the top of the foundation to the roof, placed with the unpapered side against the sheathing. Where FUL-THIK Batts are used in 4 in. studding, the paper laps should be tacked to the face of the studs (see Fig. E).

FIG E
FUL-THIK BATTS BETWEEN 4" STUDS

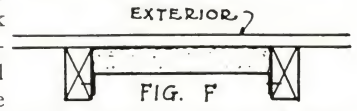


FIG. F
SEMI-THIK BATTS BETWEEN 4" STUDS OR FUL-THIK BATTS BETWEEN STUDS EXCEEDING 4" IN DEPTH

Where studding is more than 4 in., or where SEMI-THIK Batts are used between 4 in. studs, the paper laps should be turned out on the sides of the studs and tacked (see Fig. F).

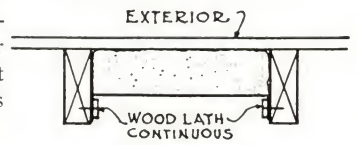


FIG. G
FUL-THIK BATTS BETWEEN RAFTERS EXCEEDING 4" IN DEPTH

Between Ceiling Joists—Lay the batts with paper side down between ceiling joists on top of lath or plaster base (see Fig. H). If lathing is not in place, or if impossible to get above ceiling joists, the batts can be placed from the underside with the paper lapping the underside of joists and tacked (see Fig. E).

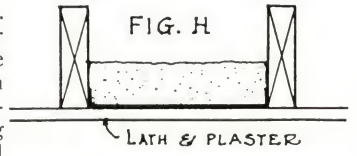


FIG. H
FUL-THIK BATTS BETWEEN CEILING JOISTS

The junction between the ceiling and exterior walls should be thoroughly insulated by carrying the ceiling batts to the face of the outside sheathing.

Between Roof Rafters—The batts should be installed between the rafters, with the unpapered side against the sheathing or shingle lath, etc. The paper laps should be turned out on the sides of the rafters and continuous wood strips applied over the laps and secured as shown in Fig. G. (If rafters are 4 in., the FUL-THIK Batts are installed as shown in Fig. E, except that the wood strips are applied over the paper laps.)

Fastening—A convenient method of securing the paper is to use a "Bostitch H-2 Hammer", which feeds staples automatically. If this is not available, ordinary carpet tacks may be used for fastening.

Maximum spacing of fasteners should be 6 in. center to center. On face of studs, joists or rafters which are to receive lath, etc., fasteners sufficient only to hold paper temporarily in place need be used.

On jobs where plaster is to be applied after the installation of the batts, it is important that adequate ventilation be provided in the interior of the building to facilitate drying.

KIMBERLY-CLARK CORPORATION

ESTABLISHED 1872

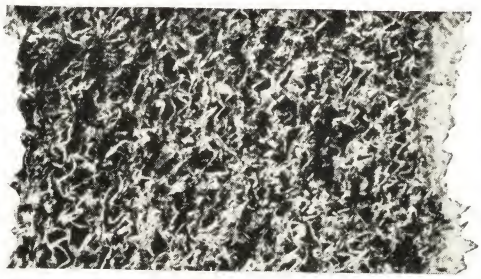
Manufacturers of a Unique Expanding Building Insulation

NEENAH, WIS.

SALES OFFICES

NEW YORK, N. Y., 122 E. 42nd Street

CHICAGO, ILL., 8 So. Michigan Avenue



This cross section of a Kimsul blanket, approximately twice natural size, shows the creped layers of fiber and the millions of still air cells which form a highly effective thermal insulant

KIMSUL

Reg. U. S. and Canada Pat. Off.

AN EXPANDING

BUILDING INSULATION

KIMSUL is a wood fiber product manufactured by the KIMBERLY-CLARK CORPORATION, who have been making paper and other products from wood fibers since 1872.

KIMSUL provides insulation of the blanket type, being composed of many thin layers, so formed as to include a maximum number of dead air cells. The materials used and their treatment in manufacture make the product highly resistant to fire and water and obnoxious to rodents and vermin. KIMSUL has no odor, either when new or after installation.

UNIQUE PROPERTY OF EXPANSION

Besides providing an insulating material of high thermal efficiency and the other properties demanded by architects and builders, KIMSUL's unique "expandability" makes its particularly desirable because the costs of handling and installation are reduced by its greater convenience.

Like all insulating materials, KIMSUL stops the passage of heat by interposing a barrier constituted largely of air. When installed, KIMSUL weighs only 137.2 lbs. per 1,000 sq. ft. The shipping, trucking, handling and installation of KIMSUL is made simple, easy and inexpensive because at the time of manufacturing it is compressed to about 20% of its installed volume.

A carton only 16x20x24 in. in size contains enough KIMSUL to cover 250 sq. ft. of area with a blanket 1 in. thick—the equivalent of 20¾ cu. ft. of material, which is shipped and handled in a carton containing slightly more than 4 cu. ft. Thus sufficient KIMSUL to insulate an entire house can easily be carried in one truck load, and one man can easily carry the bulk and weight of KIMSUL required to insulate an average room 14x20 ft. in size.

With KIMSUL there is absolutely no waste of material. A regular size blanket fills a standard wall opening 15 in. wide (studs on 16-in. centers) and its expansion and flexibility permit filling any opening from 8 ft. 4 in. to nearly 10 ft. high. The odd pieces of KIMSUL resulting from the insulation of non-standard spaces are used for caulking the space around door and window openings so that all of the material is utilized.

Physical Properties

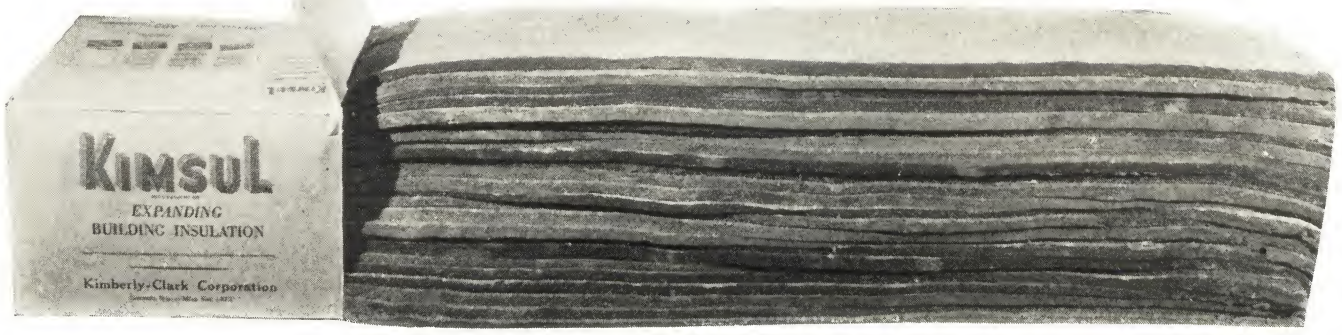
In addition to these obvious advantages which produce handling and installation economy, KIMSUL more than meets the challenge of competitive products on the following points:

Thermal Conductivity—KIMSUL's conductivity (or K factor) is 0.25 B.t.u./hr./sq. ft./in./° F., according to J. C. Peebles of Armour Institute of Technology. Properly installed, its total effectiveness is even greater, for in addition to the millions of still air cells permanently formed in the blanket itself, air spaces are created on both sides of it. (See "Exclusive Physical Feature.")

Lightness—At ordinary thickness, KIMSUL has an installed density of 1.64 lbs. per cu. ft. Installed, 1000 sq. ft. of it weigh only 137.2 lbs. Thus KIMSUL adds relatively little weight to the structural load of a building.

Permanence—KIMSUL will last as long as the walls of the building it is insulating. It is heat, air, and moisture resistant. Non-toxic chemicals protect it against fire. The materials used in its manufacture are not

KIMSUL is delivered on the job in fibre cartons 16 in. x 20 in. x 24 in. and containing 24 blankets of KIMSUL 1 in. thick and 15 in. x 20 in. At time of installation each blanket is expanded from its original length of 20 in. to a length of from 8 ft. to nearly 10 ft.



KIMSUL EXPANDING BUILDING INSULATION

subject to attacks by vermin, insects, and fungi. Asphalt binds it together in such a way that it will not separate, sift, or disintegrate.

Clean and Odorless—KIMSUL is not a by-product. It creates no dust or dirt at time of installation and will not develop an odor.

One Inch Thickness—Many tests have proved that with its unusually high insulating efficiency, a 1-in. blanket of KIMSUL provides the maximum of insulation value at the lowest possible cost. Hence KIMSUL blankets are made to provide a thickness of 1-in. when installed.

How To Install Kimsul

No special skill or tools or experience are required to handle or install KIMSUL. It is shipped in fiber cartons with over-all dimensions of 16x20x24 in., weighing 38.75 lbs. gross, 34.3 lbs. net. Because of KIMSUL's unique creping process, each of these cartons holds 250 sq. ft. of insulation consisting of 24 blankets 15 in. wide and 8 ft. 4 in. long when expanded to normal length.

The convenience of this method of packaging is one of the features which explains why architects and contractors so readily accept KIMSUL insulation. A separator sheet divides each carton into two sections of 12 blankets each, or 125 sq. ft., making it possible to fill odd lot small orders more accurately. KIMSUL occupies less storage space than any other kind of insulation. 20 cartons or 5000 sq. ft. can be stored in 32x40 in. of floor space when the cartons are stored 10 ft. high. There is no loss of material or fire hazard during storage.

For ease of handling, it is best to remove the KIMSUL blankets from the container and allow them to stand for a few moments. Then, using ordinary precautions against stretching, pick up one blanket at a time by separating it from the others at the point indicated by the colored marker.

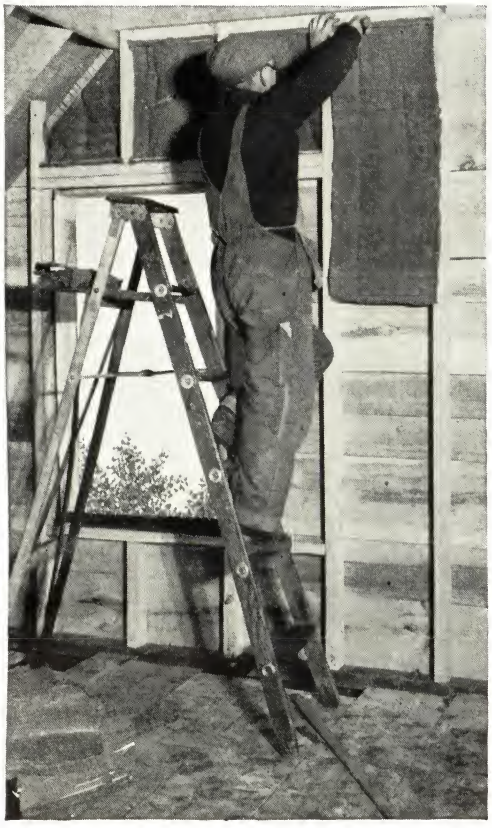
To Insulate Vertical Walls

Expand the ends of the compressed blanket, then push it between the studs with the top end against the header. (See Figure 1.) It is not important to center the KIMSUL blanket on the header because of its automatic centering action. (See "Exclusive Physical Feature").

When the blanket is in place, fasten it at the top by placing a lath, cut to the correct length, against it and driving two nails through the lath and the KIMSUL blanket into the header. Then grasp the free end of the blanket gently and draw it downwards to the desired length. (See Figure 2.) In the beginning it may prove helpful to do this by holding the free end between two wood strips and drawing on them, but with a little experience that becomes unnecessary. After a blanket is expanded to the full length of the section, attach it to the sill plate with a lath in the same manner that it was attached to the header.

Finally fasten the blanket along the sides near the studs by driving sheathing nails, at intervals of 15 to 18 in. through the edges of the insulation into the sheathing (Figure 3.) Drive the nails in only a short distance so as to avoid compressing the material. After each nail has been driven the blanket should be pulled out away from the sheathing up to the head of the nail.

When the spaces to be filled are of less than standard width, cut the blanket to the odd widths required before expanding it. This is done most easily with a hatchet, but shears or any reasonably sharp implement will serve the purpose.



Exclusive Physical Feature

So that KIMSUL will center itself in the space where it hangs, regardless of how it is installed, the product has been designed to expand slightly after vertical installation. This produces small bulges or loops at the blanket nails, sufficient to push the KIMSUL away from sheathing or plaster and create an air space on either side. This increases the thermal resistance of the wall, and moreover assures ventilation of the inner sheathing surface to inhibit water and mold formation.

← **Figure 1**

Neither special tools nor special skill are required to install KIMSUL insulation. By reason of the fact that KIMSUL blankets fit standard wall openings (studs on 16-in. centers) and can be expanded to any required length between 8 and 10 ft., work progresses much more rapidly with KIMSUL than with materials which have to be measured and cut. Moreover, waste is eliminated and as a result the actual cost of insulation markedly reduced.

Figure 2 →

KIMSUL EXPANDING BUILDING INSULATION

In filling spaces of less than standard length, cut strips to required dimensions from blankets that have been fully expanded.

Insulation of Sloping Roofs

Figure 4 illustrates the correct method of installing KIMSUL in a sloping roof. The blanket is fastened top and bottom, as shown, using the same method recommended for vertical walls. The only departure comes in securing the sides. These should be attached with lath along the full length of both edges.

After installation KIMSUL expands slightly, thus creating an air space between the roof deck and the insulation. The advantages of this unique action of KIMSUL have already been described.

Insulating Ceilings or Floors

Figure 5 shows how KIMSUL is laid between the floor joists on a flat ceiling. The blankets are placed directly on the plaster base and expanded as they are installed. A 2-in. overlap is recommended on blanket ends. When it is necessary to use two or more lengths of KIMSUL, the splices should be made by nailing the two ends between two pieces of lath, as shown in the illustration. In addition to insulating the ceiling, all openings at the tops of studs should be plugged with pieces of KIMSUL.

Odd Corners and Spaces

Insulating odd corners and spaces with KIMSUL is simple; for no special skill or tools are needed to cut or tear it to the required shapes. However, in installation the same practices should be followed that have been described in the previous instructions. Always attach the tops and bottoms of the pieces with lath. If the height of the opening exceeds 15 in., drive supporting nails into each side of the material, except when the installation is to be made at an angle. Then both sides should be attached with laths, in accordance with the instructions given for sloping roofs.

Caulking

Caulking around openings in cold walls is vital to any good job of insulation, since no amount of weather stripping can stop infiltration between casements and walls. KIMSUL is the ideal caulking material. Small pieces of it can be tamped quickly and firmly into all cracks and crevices (as shown in Figure 7), with the assurance that the flexible fibers which compose it will pack so tightly that they will eliminate heat leakage no matter how small the opening.

No Waste

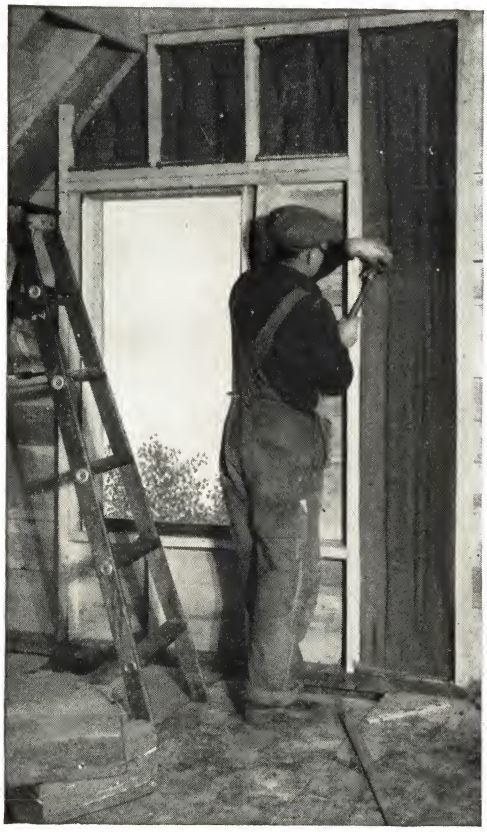
Odd shaped KIMSUL pieces produced when non-standard wall areas are insulated are ideal for caulking. Thus KIMSUL can be used completely and no waste results.

For Thick Insulation

Where more than 1 in. of material is desired—use two blankets of KIMSUL as illustrated in Figure 6. The end attachment demonstrated in the illustration is recommended only for vertical walls. For sloping roofs or spaces use the method shown in Figure 5.

Estimating Amount Required

The quantity of KIMSUL required on any job is easily estimated. The total cold wall area is first calculated and the total area of windows and door openings is subtracted from it. Then the number of KIMSUL blankets required can be determined by figuring each blanket as 15 in. in width by 8 ft. 4 in. in length. However, in making estimates, bear in mind the fact that the KIMSUL blanket can be expanded safely up to nearly 10 ft. for KIMSUL's creped construction permits it to expand to almost any reasonable length without affecting its thermal efficiency. Therefore, if the openings to be filled exceed standard length by not too great a margin, it is safe to estimate one KIMSUL blanket to each 15 in. of horizontal wall space.



←Figure 3

Permanence is assured when you specify KIMSUL by the fact that all the fibers in a blanket are bound together by asphalt. Consequently nothing more is needed to hold KIMSUL in place after it has been fastened top and bottom but a few nails driven through the blanket to anchor it to the sheathing.

The unequalled installation economies of KIMSUL are nowhere more apparent than in insulating sloping roofs and floors. For the former, after fastening the KIMSUL blanket top and bottom, all that is necessary is to secure the sides by attaching laths along both edges.

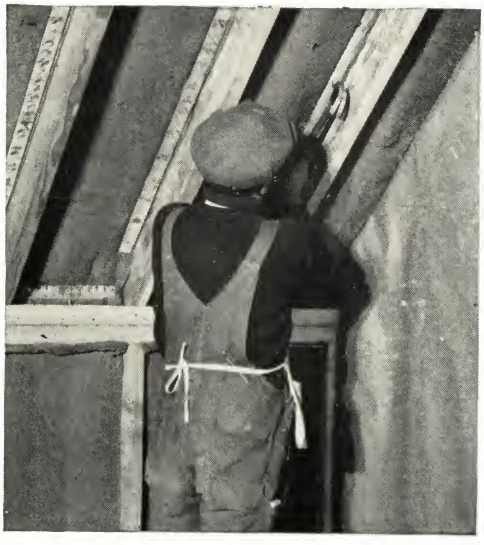


Figure 4→

KIMSUL EXPANDING BUILDING INSULATION

←Figure 5

Because KIMSUL is so light that it adds no appreciable structural load it is possible to insulate floors with it by placing the blankets directly on plaster base and expanding them as they are installed. Fig. 1.

Here is shown proper method for installing a second layer of KIMSUL where possible fuel saving warrants additional investment. The two blankets are attached to header at the same time, but it is best to expand them separately as shown.

Figure 6→

Suggested Specifications

All exterior walls and the roof shall be insulated with 1-in. KIMSUL, as manufactured by KIMBERLY-CLARK CORPORATION, Neenah, Wis.

Note: Occasionally one or more interior walls are insulated also, particularly those of the bathroom. Sometimes the first floor ceiling is insulated so that downstairs living quarters will remain warm, though upstairs bedrooms are cold at night. In such cases, suitable additions to "Work Included" should be made in specifications.

All exterior walls and top floor ceilings shall be vapor-sealed to prevent condensation of moisture, with a paper containing a continuous film of asphalt.

Insulation shall be installed in accordance with manufacturer's specifications. The ends of the blankets shall be firmly anchored with pieces of wood lath and nails driven through both lath and blanket into headers and sills. Sheathing nails 2 in. long shall be driven through KIMSUL blanket and into the sheathing every 15 in. of vertical distance and 3 in. from each edge of the blanket. These nails shall not be driven far enough to compress the blanket.

In sloping roofs the KIMSUL shall be anchored at each side of the blanket with wood lath and nails.

In spaces wider than those filled by KIMSUL *blankets* of standard width (15 in.) blankets shall be firmly butted at the joint and supporting nails shall be driven not more than 3 in. from the edge in both blankets and for every 15 in. of vertical distance.

All spaces around window and door openings in the exterior walls are to be caulked with odd pipeces of KIMSUL.

When the KIMSUL has been installed a *vapor-barrier* of waterproof paper is to be tacked in place with overlap of at least 2 in. at all joints.

Supplementary Specifications (to be included under Other Division).

Construction—Framing shall be 16 in. on centers.

Note: This dimension will make standard KIMSUL blankets fit exactly between studs.

When KIMSUL is used it is unnecessary to buy other materials for caulking around door frames and window casements. Small pieces of it can be easily rammed into cracks, no matter how tiny, with the assurance that the fibers will pack tightly enough to eliminate leakage.

←Figure 7

Application of the vapor-proof seal is accomplished as shown here. A generous overlap should be allowed at edges in order to block out the vapor completely and thus prevent condensation of moisture within the wall.

Figure 8→

KEASBEY & MATTISON COMPANY

AMBLER, PA.

DISTRICT OFFICES

ATLANTA, GA. CHICAGO, ILL. CLEVELAND, OHIO HOUSTON, TEX. SAN FRANCISCO, CALIF. NEW YORK, N. Y. PHILADELPHIA, PA.

For Other K&M Products, see File Index

K&M MINERAL WOOL HOME INSULATION

K&M Mineral Wool Home Insulation is available in many forms to meet every kind of application in either old or new home construction. K&M Insulation, applied either by blowing, pouring, hand packing or in roll form, insures even distribution. K&M Mineral Wool is an ideal insulation against summer heat or winter cold—actual tests show that homes insulated with K&M Mineral Wool are 8° to 15° cooler in summer and save up to 35% on fuel costs in winter.

K&M Mineral Wool will not burn. It seals off the hollow flue-like space between outside wall and plaster, as well as the space between top floor ceiling and roof. The application of K&M Mineral Wool guarantees less furnace forcing, which means less chance of overheating pipes and flues thereby greatly reducing fire hazards.

K&M Mineral Wool seals cracks and openings that permit infiltration of air, retards flow of air currents because it assures more even room temperatures. Draughts are materially reduced and ventilation is under positive control. K&M Mineral Wool serves as a deadener of outside noises. It is proof against rodents and termites, because of the fact that it is an inert and indestructible wool made from minerals.

AVAILABLE FORMS OF K&M MINERAL WOOL INSULATION

Roll Wool

Roll Wool is supplied in 9-ft. long strips, 15 in. wide and approximately 2 in. thick. Unusual length makes for rapid application. Paper-backed to allow the wool to be unrolled into position. Packed 2 rolls to the bag. One bag covers 22.5 sq. ft. net area.

Wall-Thick Bats

Generally used between studding and joists in new construction. Can be applied between 16 or 24-in. stud centers, and can be easily cut to fit irregular spaces. Stiff and water repellent. Furnished in 15 x 23-in. size, 8 bats to a carton, sufficient to cover 19.2 sq. ft. net area.

Thrift Bats

Same as Wall-Thick Bats, except for thickness, which is 2 inches. Furnished 12 to a carton, sufficient to cover 28.8 sq. ft. net area. Stiff and water repellent.

Blowing Fibre—Granulated Mineral Wool

K&M Mineral Wool in granulated form is ideal for application between walls, over flat and sloping ceilings. It may be blown or poured, depending on whether it is being used for old or new construction. Furnished in 40-lb. bags. Recommended covering capacity 20 sq. ft. to a bag, applied 4-in. thick for flat work and 14.5 sq. ft. to a bag applied between 2x4-in. studs for partitions and side walls.

Loose Mineral Wool

A long fibre form of K&M Mineral Wool, suitable for hand packing between joists or studs in new construction, or in irregular places anywhere in the house. Comes in 35-lb. bags. Recommended covering capacity 17 sq. ft. to a bag, applied 4 inches thick.

Application of Roll Wool Between Joists

Easy Home Insulation with Wall Thick Bats

Spreading Loose Mineral Wool

REYNOLDS CORPORATION

19 Rector Street
NEW YORK, N. Y.
OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES

For Ecod Lath for plaster base, Air Conditioning Units and Prefabricated Ducts for heating systems, see File Index

METALLATION FOR INSULATING BUILDINGS

Description—Reynolds METALLATION* consists of bright sheet aluminum cemented to both sides of a tough kraft paper, furnished in rolls.

Uses—METALLATION can be used for insulating the walls and roofs of all types of buildings. Millions of feet are in homes, apartments, hotels, office buildings, factories, garages, farm buildings, Government projects, theatres, etc.

How Metallation Insulates — METALLATION repels practically all radiant heat which strikes its surface. This portion of the total heat loss ordinarily flows unimpeded across air spaces. METALLATION must always face or divide an air space. Type A or Type B METALLATION dividing an ordinary air space reduces heat by convection, by dividing air space into two air spaces and stops 95% of the radiant heat loss across such air spaces.

Characteristics—METALLATION is waterproof, windproof, verminproof and non-absorptive. It is light in weight and flexible, yet stiff enough to conform to angle and curves when not under tension or suspended. Its heat storage capacity is negligible, due to its light weight and limited mass. The aluminum used retains its reflectivity under all normal conditions as the surface is protected by a transparent oxide which forms immediately on exposure. Tests conducted by Prof. Gordon B. Wilkes on METALLATION exposed to laboratory fumes, moisture, dust and salt water atmosphere show that visual brightness is not essential to good performance. Aged and soiled material maintained reflectivities from 87.5% to 94.5%.

Installing Type B Metallation parallel to studs to form curtain within the air space.

METALLATION insulation will not absorb moisture, therefore, its insulating value is not affected by water or water vapor. An absorbent material loses its insulating value as its moisture content increases.

How to Calculate Insulation Values—In calculating the value of METALLATION in building sections, it is necessary to consider the conductance (or its reciprocal, the resistance) of the air space it faces.

In Table 1 the various conductance and resistance values of air spaces faced with ordinary materials and METALLATION are given, using the data recommended for computation purposes in the A.S.H.V.E. Guide, 1936.

Where to Buy—Reynolds METALLATION is stocked for quick delivery by leading lumber and building supply dealers throughout the United States.

Approved applicators are available for its installation if desired.

Table 1 - INSULATING VALUES of AIR SPACES WITH and WITHOUT METALLATION (ASHVE GUIDE 1936)

I - APPLICATION OF METALLATION (Arrows point from reflective surfaces)	II - CONDUCTANCE AND RESISTANCE VALUES	Conductance	Resistance
Structural air space faced both sides with ordinary building materials	Air space over ¾" faced both sides with ordinary materials	1.10	.91
Structural air space faced one side with Metallation	Air space over ¾" faced one side with Metallation	.46	2.17
Structural air space faced both sides with Metallation	Air space over ¾" faced both sides with Metallation	.41	2.44
Structural air space divided by one curtain of Metallation - forming two air spaces each ¾" or more wide	Air space divided by single curtain of Metallation (both sides bright) forming two air spaces each over ¾"	.23	4.35
Structural air space divided by two curtains of Metallation - forming three air spaces each ¾" or more wide	Air space divided by multiple curtains of Metallation each air space over ¾" — 2 curtains forming 3 air spaces	.15	6.78
	3 curtains forming 4 air spaces	.11	9.22
	4 curtains forming 5 air spaces	.09	11.66
	Exposed surface ordinary building materials in still air	1.65	.61
	Exposed surface faced with Metallation in still air	1.18	.85

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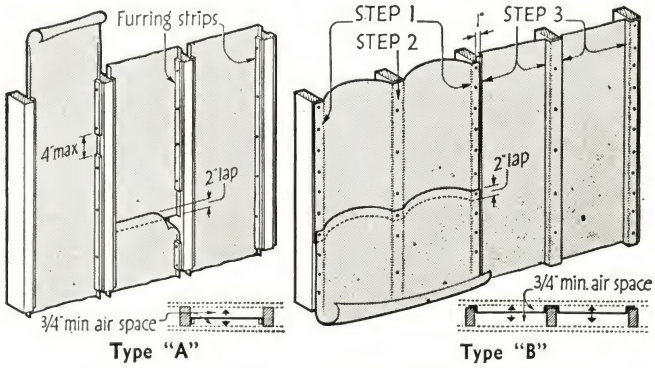
Table 2 - FORMS OF METALLATION ▲

TYPE	Aluminum Surface	Size of Rolls — Width	Length	Area	Approx. Net Wt. per Roll
A	Both sides - 1¼" bare paper edges	17" total	176'6"	250 sq. ft.	12¼ lbs.
B	Both sides, edge to edge	36"	83'4"	250 sq. ft.	14 lbs.
		33"	90'11"	" " "	" "
		25"	120'	" " "	" "
C	One side only, edge to edge	36"	83'4"	250 sq. ft.	10½ lbs.
		33"	90'11"	" " "	" "
		25"	120'	" " "	" "

▲Mounted on heavy kraft paper.
N. B. For greater strength specify METALLATION mounted in Sisalkraft. Stocked in Types "B" and "C"—33 in. wide.

METHODS OF INSTALLING



Type "A" Type "B"

*Trade Mark Reg. U. S. Pat. Off.

THE F. C. RUSSELL INSULATION COMPANY

Rock Wool Insulation and Complete Air Circulation System

3925 So. Hanover Street, BALTIMORE, MD.

RUSCO ROCK WOOL INSULATION

Advantages of Rock Wool

The Rusco Rock Wool installation with the Rusco complete air circulation system provides greater comfort in any home during all seasons of the year. The principle advantages are: (A)—Keeps all rooms in the house at a uniform temperature, winter or summer. (B)—Eliminates cold drafty floors, thus greatly reducing the family sickness hazard. (C)—Permits restful, refreshing sleep during the hot sultry weather. (D)—Makes every room in the house from 8° to 15° cooler during extremely hot weather. (E)—Reduces the fire hazard—since Rusco Rock Wool is definitely fireproof. (F)—The Rock Wool deadens sound, cannot decay or deteriorate—is odorless, clean, resists vermin.

The installation of Rusco Rock Wool and Rusco complete air circulation by an authorized Rusco dealer is an assurance of every advantage mentioned above as well as the conveniences shown in the following paragraph.

Air Conditioning Units

In Summer—The Rusco self-contained, all-automatic exhaust unit with three speed remote control removes all hot air from attic or roof spaces during the day and draws in the cool night air, circulating it throughout the entire house. This is actually air conditioning in its simplest, most inexpensive form.

The Rusco interior air circulator at all times can be used to circulate the cool, refreshed air which is from 8° to 15° cooler than outside temperatures, effecting a most delightful and healthful condition with comfort that can be obtained in no other way.

This combination of exhaust and interior circulation provides air conditioning in its most healthful, natural and comfortable form at a cost within the means of every home owner.

In Winter—The Rusco self contained, all-automatic exhaust unit with three speed remote control can be used at all seasons of the year to refresh the atmosphere within the home, remove odors, smoke, etc.

During severe cold weather it can be operated at low speed for the purpose of creating circulation and exhaust from the attic and roof spaces only, which will avoid any possibility of condensation which sometimes occurs when excessive humidities are maintained within the home.

The Rusco interior air circulation system can be used to circulate warm air throughout the house creating even, uniform temperatures in every nook and corner.

For New Homes

In a new home, Rusco Rock Wool Insulation is easily installed as construction progresses. The material itself is available in several pre-fabricated forms and as fluffy, bulk wool. There is a form of Rusco Rock Wool Insulation which is ideally suited to each phase of construction in order.

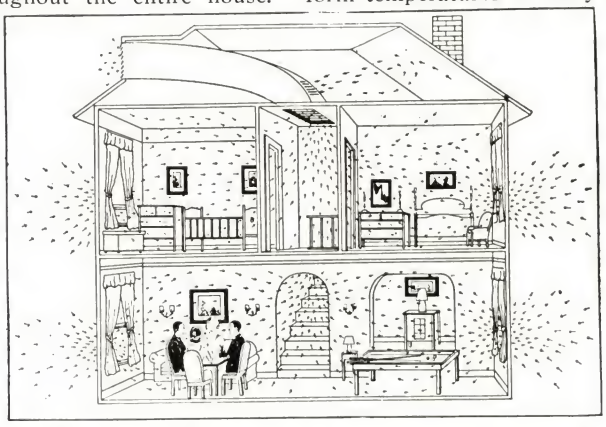
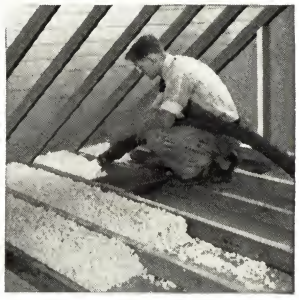
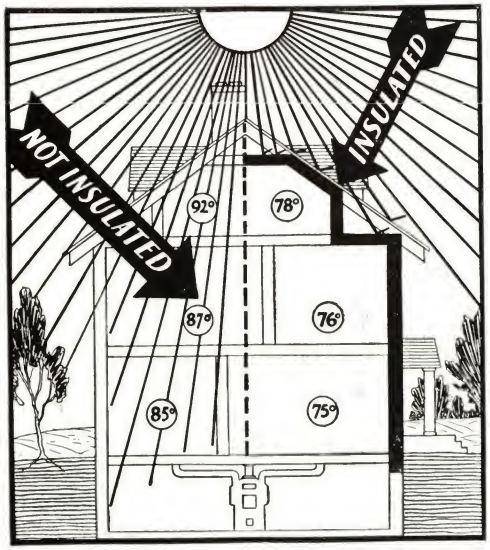


Diagram illustrates how fresh air is circulated throughout the home at night



For Homes Already Built

Surprising as it may seem, present homes of any type construction may be thoroughly insulated, within two or three days without making any alterations in the house, without making any mess or disorder inside or outside, and without leaving any visible trace of the tremendous improvement that has been made in the property.



Prevents the Entrance of Heat in Summer

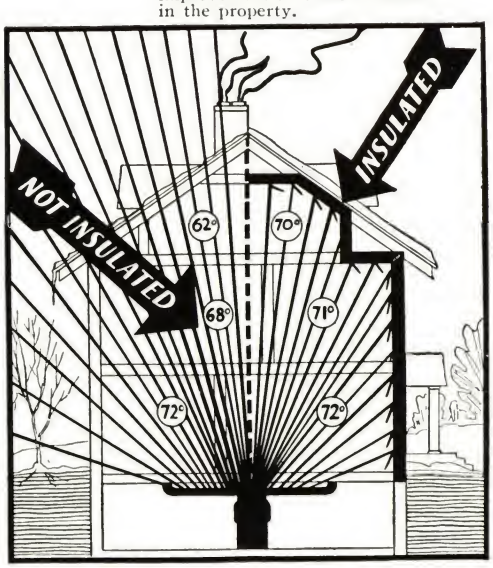
The combination of Rusco Rock Wood and Rusco Air circulation is a profitable investment—not an expense. It provides all these comforts, gives all these features of safety and savings.

Winter

Rusco Rock Wool Insulation permanently stops 81% of the heat transfer that is common to all uninsulated houses. All rooms have uniform temperatures.

Summer

In summer, the walls and roof of the uninsulated home offer comparatively no resistance to the intense heat of the sun. This heat cannot penetrate the thick blanket of Rusco Rock Wool.



Prevents the Escape of Heat in Winter

Complete specifications covering installation and operation of the Rusco Air Circulation System are available on request.

TYPES OF RUSCO ROCK WOOL

Special Processed Blowing Wool

Rusco Special Processed Blowing Wool is the best and most economical insulation that can be purchased for insulating homes already erected. The entire house can be quickly and easily insulated by pneumatic method inside of two or three days without showing any trace of the work having been done. A 4-in. space filled with Rusco Rock Wool has more insulation value than 11 ft. of solid rock. Absolutely fireproof, heatproof and coldproof. Rusco Special Processed Blowing Wool comes in 35-lb. bags ready for use.

Vaporproofed Batts

For use in thoroughly insulating new buildings in process of construction, Rusco Vaporproofed Batts have no equal. They are constructed with a backing of moistureproof paper and can be inserted between wall and roof rafters and studding. Packages contain four 15 x 48 in. x wall-thickness pieces, insulating 20 sq. ft., six 15 x 48 in. x semi wall-thickness pieces, insulating 30 sq. ft. and eight 15 x 24 in. x wall-thickness, insulating 20 sq. ft. of wall or roof. The Vaporproofed Batts carry the same high guarantee as all other types of Rusco Rock Wool Insulation. Specify Rusco Rock Wool Vaporproofed Batts on all new buildings and assure your clients the utmost in satisfaction.

Loose Wool

Especially adapted to use in miscellaneous places in the construction of new homes, this less expensive form of Rusco Rock Wool Insulation fills a definite need not found in many competitive insulation products. It is a handier form of loose commercial rock wool. It is extremely flexible and easy to install where initial costs must be kept low. Extremely low in thermal conductivity, it is rapidly coming into favor as a secondary filler for odd places not adapted to the regular Vaporproofed Batts. Carries the same guarantee as other forms of Rusco Rock Wool Insulation.

RUSCO ROCK WOOL RECOMMENDED INSULATION SPECIFICATIONS

INSULATION OF EXISTING HOMES BY PNEUMATIC METHOD

Roof Insulation

All flat top floor ceiling areas shall be blown to uniform 4 in. thickness of Rusco Special Processed Blowing Wool.

All finished slopes shall be blown to the full thickness of the rafters.

Knee walls shall be insulated with Rusco Vaporproofed Batting to the full thickness of the studding.

Flat areas between knee walls and eaves shall be blown to a full 4 in. thickness.

The density of the above insulation shall average 2 lbs. per sq. ft. 4-in. thickness.

Sidewall Insulation — Frame Construction

All exterior walls shall be insulated by removing the shingles, clapboard, stucco or brick veneer between the studding spaces to permit drilling 2½-in. holes in the sheathing. These spaces will then be blown full studding thickness with Rusco Special Processed Blowing Wool to an average density of 2 lbs. per sq. ft.

This contract to include all openings and closings to leave the building without any defacement. All of the above work shall be installed by an approved insulation contractor of the manufacturer.

INSULATING NEW CONSTRUCTION

Roofs

All top floor flat ceiling areas shall be insulated with a 4 in. fill of waterproofed Rusco Granulated Rock Wool applied to an average density of 2 lbs. per sq. ft. 4-in. thickness.

All sloping areas shall be insulated with Wall Thickness Rusco Vaporproofed Batting held in place by staples in the flanged edges to the inside face of the roof members. All knee walls shall be insulated in a like manner. Exterior sidewalls shall be insulated with Wall Thickness Rusco Vaporproofed Batting in the same manner provided for slopes and knee walls.

Sidewalls

Solid brick or stone construction shall be first waterproofed against the interior face with a treatment of hot pitch or equal before application of Rock Wool. Rusco Vaporproofed Batting wall thickness will then be applied in the same manner as mentioned for frame construction.

ROCK PRODUCTS COMPANY

Rock Wool Insulating Materials

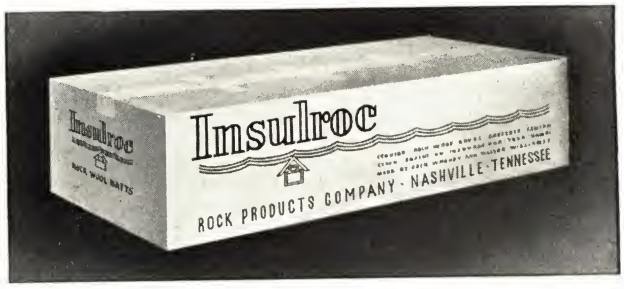
150 Fourth Avenue, North, NASHVILLE, TENN.

Insulroc

Insulroc is one of the most efficient insulating materials obtainable. It is a genuine rock product, chemically stable, clean, vermin and rodentproof, sanitary, and, by its very nature, fireproof. The thermal conductivity of this material is 0.27 B.t.u. per sq. ft. per hour for 1-in. thickness, when the temperature gradient is 1° Fahrenheit. Materials of a like physical nature and identical chemical characteristics, have a permanent service record completely free from settling and moisture penetration, over a period of 50 years, unquestionable evidence of permanency. Laboratory tests indicate Insulroc will stop 76 to 89 per cent of all heat normally conducted through all types of construction.

Application

Insulroc is genuine rock wool applied by modern "controlled pressure blowing equipment" to a predetermined density of 6 lbs. per cu. ft., assuring maximum efficiency. Licensed applicators, working in accordance with the manufacturer's specifications, insure a satisfactory job. With the equipment at their disposal, it is only necessary to remove a few bricks, or sections of clapboard, and make a small hole in the sheathing. The insulation can then be installed with no annoyance to the occupants of the home. All work is done from the exterior. The "controlled pressure blowing equipment" is located away from the house. It is recommended that Insulroc Premium Grade A Granulated Rock Wool be installed in existing homes and buildings, and that batt-type materials be used in new construction.



Insulroc Batts

Insulroc batts are made in two standard types: (1) The DeLuxe Batt made from waterproofed Insulroc with moistureproof Kraft paper backing. Nailing flanges are provided on each side, furnished in sizes 15x48, 15x23 and 15x24 in., respectively, by wall thickness, shipped in corrugated cartons. (2) The Standard Batt, or Pad, is used where moistureproof features are not required, furnished in size 8x15 in. x wall thickness. Shipped in corrugated cartons. Both types are made to fit standard studding and ceiling joists. They may be easily cut with knife, or saw, to fit irregular spaces.

Method of Insulating an Open Attic with Insulroc by the "Controlled Pressure Method"

Fire Protection

This superior quality rock wool insulating material assures a high degree of fire protection, when installed in side walls and ceilings. It prevents "flue action" by stopping the open vertical space and thus helps to eliminate the greatest of all fire hazards. Temperatures up to 1,600 degrees cannot penetrate a 1-in. thickness of Insulroc.

Easy Installation of De Luxe Batt in Sidewall Studding

Insulroc Commercial Wool

In this form, Insulroc Commercial (Loose) Wool is frequently used for packing around pipes and areas difficult to insulate with other types. It is furnished in 35-lb. double wall Kraft bags.

SPECIALTY CONVERTERS, INC.

SILVERCOTE DIVISION
161 East Erie Street
CHICAGO, ILL.
MILLS: KALAMAZOO, MICHIGAN—EAST BRAINTREE, MASS.
For Milcor Silvercote Insulating Plaster Base, see Milcor Steel Co.'s Catalog

PRINCIPLE OF REFLECTIVE INSULATION

LAWS OF HEAT TRAVEL—The following statements may be made as facts, susceptible of proof, accepted as established laws of heat travel.

LAW NO. 1—HEAT TRAVELS IN THREE WAYS—

1. **By Conduction**—The passage of heat through solid materials molecule to molecule, by contact. The denser the material the faster the heat travel. Hence heat travels more readily through metals than wood and more readily through wood than fibrous material or cloth. (Illustrations—the passage of heat to the handle of a poker, one end of which is in fire. The melting of snow on a cement walk where a heated portion of an adjoining building is under the walk, when the outside temperature is below freezing.)

2. **By Convection**—The conducting of heat through atmosphere by air currents. (Illustration—The rising of heated air from a radiator or heater, its passage to the top of a room or enclosure, its passage downward on cooler sides of such room or enclosure, particularly in front of windows in cold weather.) Heat travels by convection in all air spaces but the smaller and more confined the air space, the less convection occurs.

3. **By Radiation**—The direct passage of heat energy through space (atmospheric or vacuum), from object to object, without molecular contact (conduction) or atmospheric movement (convection). (Illustrations—The sun's heat rays (infra red rays) passing through space for 90 million miles and becoming heat upon contact with atmosphere and earthly objects. The passage of heat from the filament of an electric light bulb across the vacuum in the bulb, becoming heat upon contact with the glass enclosure.)

LAW NO. 2—Through a vacuum heat is transferred 100% by radiation and through such air spaces as usually occur in building construction, the heat transfer by radiation is estimated at 50% or more. Silvercote products deal essentially with radiant heat.

LAW NO.3—A brilliant, polished surface reflects heat rays in exactly the same manner as it reflects light rays. Heat rays (infra red rays), however, unlike light rays, penetrate optical darkness and are reflected with equal effect in sealed dark spaces not visible to the eye. Such surfaces reflect, rebound, or turn back a large percentage of the radiant heat that strikes them, according to the brilliancy and homogeneity of the surface, entirely preventing such percentage of heat from entering the material in the slightest degree.

LAW NO. 4—EMISSIVITY—A highly polished, reflecting surface emits or throws off heat much more slowly than a dull, dark surface. All colors, tones, and hues have rated values in the emission of heat. Dead black, which absorbs and emits more heat than any other shade, is taken as a standard and rated 100%. Under this classification, a brilliant pure silver surface is rated at 9%, and polished silver-like surfaces are rated near this percentage. Hence the small percentage of heat that is admitted to a material having a polished silver surface is discharged very slowly from the opposite side when that side is also surfaced with a like silver surface. (Illustrations—A black kettle discharges vastly more heat than one surfaced outside with a burnished surface of silver or copper. Radiators, and all heating units, are in their most effective color for the discharge of heat when black.)

LAW NO. 5—Prior to the full development of the reflective principle, all commercial thermal insulation was based upon the slow conduction of heat, the principle being to build a structure, filled with minute air cells, too small for convection, that would interfere with the transfer of heat from molecule to molecule and thus slow up its passage from one side of the material to the other.

The principle of reflective insulation is to reflect or rebound heat at the surface of the material and permit as little as possible to enter.

For the above reason, the thickness of a reflective material does not matter (as is the case with other types of insulation), so long as it possesses sufficient strength to be practical in the usual forms of construction.

AIR CONDITIONED OFFICES
SUTHERLAND PAPER CO., KALAMAZOO, MICH.

SILVERCOTE SURFACES

The surfaces of all Silvercote products are oxides polished into a brilliant silver sheen which reflects radiant heat to a marked degree, as will be observed by the insulating values recited hereafter in these specifications and drawings. Essential properties follow:

1. The surfaces are made with oxides and are consequently free from oxidation to which many industrial metal surfaces are subject.
2. The surfaces are waterproof and washable.
3. The surfaces are highly moisture resistant.
4. The surfaces are not affected by acids or gases encountered in the customary uses of thermal insulation, whether in building construction, refrigeration, or the cold storage fields.
5. The surfaces are entirely homogeneous and impervious to air infiltration.

SILVERCOTE INSULATION FABRIC

DESCRIPTION—Silvercote Insulation Fabric is manufactured from two external sheets coated with a mineral pigment and polished to a highly reflective surface possessing the essential characteristics heretofore described for all Silvercote surfaces. The sheets are laminated with specially prepared asphaltum and reinforced with an interlining of fabric, imbedded in the lamination, consisting of a half-inch mesh of strong jute cords. Two silver like surfaces are exposed. The material thus fabricated is strong and flexible and applicable to all forms of construction. It can be creased, folded, and tucked into the most inaccessible places without injury. It requires no specialist for its installation but can be successfully handled by the most inexperienced. Silvercote Insulation Fabric weighs 100 lbs. per thousand square feet.

SIZES—Silvercote Insulation Fabric is made in convenient widths and lengths. It is bundled in rolls of 250 and 500 square feet in the following widths:

36 in. for spanning two framing spaces (three framing members, studs, joists, or rafters set 16 in. on centers where sheathing, flooring, or interior finish is attached to the members at the same points of contact). The 4 in. slack in the material permits it to be bowed in toward the center of the wall creating an air space on each side.

32 in. for spanning taut two framing spaces (three framing members, studs, joists, rafters, or furring set 16 in. on centers).

26 in. for spanning one framing space (two framing members —studs, joists, or rafters, set 24 in. on centers) in the same manner as described for 36 in. material.

18 in. for installation between studs, joists, or rafters set 16 in. on centers, where successive layers through wall sections are required.

THERMAL VALUE—Silvercote Insulation Fabric has been tested by a number of University and Industrial Laboratories with approximately the same results. For the purposes of these specifications, however, the tests run by Dr. J. C. Peebles of Armour Institute of Technology will be used as a basis for figuring the wall values of the various sections illustrated by the drawings contained herein. Tests of Silvercote Fabric dividing an air space conducted by the Armour Institute of Technology give it a rating of .33 B.t.u.'s per hour, per square foot, per degree of temperature F. per commercial thickness of 1/32 of an inch. The tests were run at a mean temperature at 70° F. The above values are accepted and published by American Society of Heating and Ventilating Engineers "Guide" and the "Refrigerating Data Book" issued by American Society of Refrigerating Engineers.

APPLICATION TO FRAMING—Silvercote Insulation Fabric, 36 in. Material, is designed to bridge two framing spaces (three framing members, studs, joists, or rafters set 16 in. on centers, where sheathing, flooring, or interior finish is attached to the members at the same point of contact). Application is as follows:

Nail the two outside edges, press material in, and nail through center to the intermediate framing member; then press in between members and crease at edge of each member with thumb and finger to create as uniform an air space between the material and the overlying finish as possible. Use large head tacks or staples for application.

In installing Silvercote Fabric, one important consideration should at all times be borne in mind. The reflective principle does not depend upon the solidity of a wall section but rather upon alternating air spaces with layers of material. The depth of these spaces is not particularly important. However, where possible, it is recommended that air spaces between the layers of material and between the material and adjoining structural members be held to not less than ⅜ in.

Silvercote Insulation Fabric, 32 in. Material, is designed to stretch taut across two framing spaces (three framing members, studs, joists, rafters, or furring set 16 in. on centers). In this application, use large head tacks or staples. In cases of shallow furring, a shorter nail may be used, especially where the nailing line is to be covered with another succeeding furring strip for additional layers.

Silvercote Insulation Fabric, 18 in. Material, is designed for application between framing set 16 in. on centers. As this material is put in place with ½x1 in. cleats, any nail suitable for fastening the cleats is acceptable.

The method of installation as illustrated in drawings on page 3 is prescribed to create uniform air spacing between the sheathing or exterior finish and the first layer of Fabric and between the successive layers of Fabric.

Care should be exercised, in nailing with cleats, to drive the cleats tight against adjoining framing so that no air infiltration will occur at this point.

Silvercote Fabric is tough and flexible and adaptable to all sorts of conditions. Every installation should be carefully watched to see that the Fabric is folded and tucked into all odd angles and corners, around all window and door frames, piping, etc., making a complete seal against air infiltration.

AIR CONDITIONING AND THE MOISTURE QUESTION

Silvercote Insulation Fabric is especially designed to resist the passage of vapor moisture in building structures and cold storage units, and the penetration of moisture laden air through wind pressure.

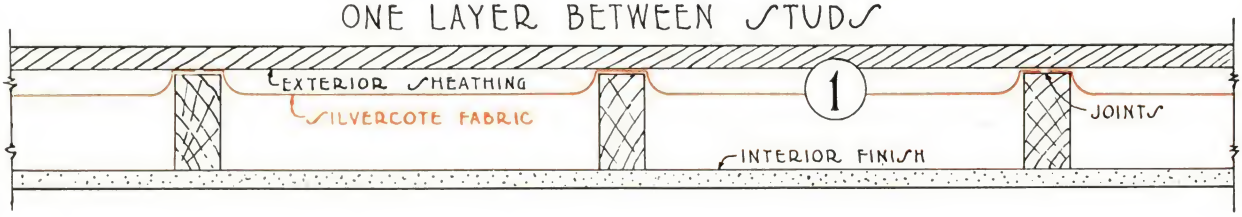
The question of moisture penetration into the framing of all structures has become more and more acute with the advent of modern heating and air conditioning. Formerly, where dry heat was produced on the interior of buildings during the winter season such moisture as passed into the uninsulated walls, readily went through the structure and was ventilated to the outside. With modern heating where relative humidities are increased from as low as 5% to as high as 50%, the moisture vapor introduced into the interior of buildings exerts a high pressure upon the inside of the exterior walls. It passes readily through plaster and other structural materials until it reaches the dew point temperature and then deposits in droplets, when this temperature is reached, upon whatever material is present in the wall. This may be the exterior sheathing or where unprotected conductive forms of insulations are used the dew point may be within the insulations themselves, and water will often collect to the point of complete drenching. In severe weather this deposit of water freezes and forms a column of ice, increasing the density of the insulation material and reducing the insulation value many times. With the advent of warmer weather the ice melts. If the insulation is in the roof section, water penetrates the plaster and produces the effects of roof leaks. If in side walls it settles to the bottom of the section drenching the entire framework. Such conditions cause framing

INSTALLATION METHOD

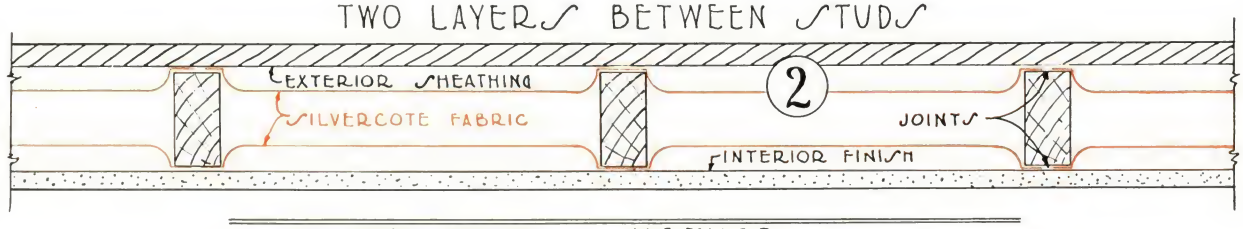
for APPLYING • ONE & TWO LAYERS BETWEEN FRAMING •• STUDS • RAFTERS • JOISTS

36" SILVERCOTE INSULATION FABRIC

ONE LAYER BETWEEN STUDS



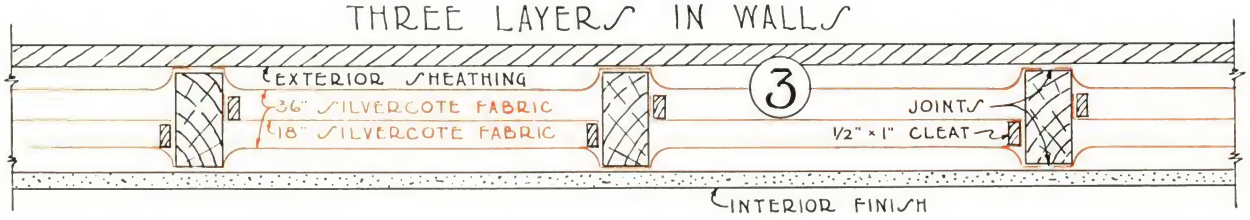
TWO LAYERS BETWEEN STUDS



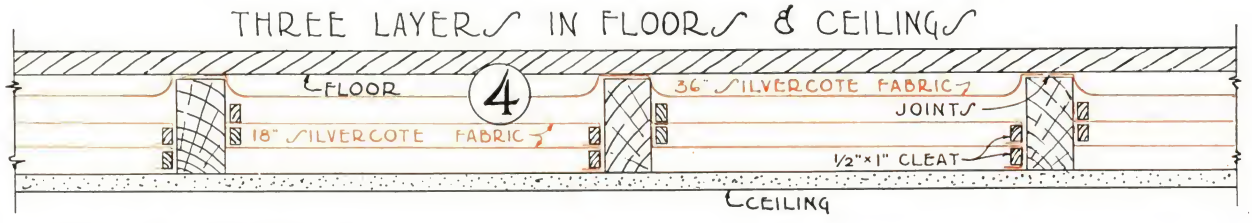
INSTALLATION METHOD

for APPLYING THREE LAYERS OR MORE IN TRUCK BODIES AND COLD STORAGE RMS.

THREE LAYERS IN WALLS



THREE LAYERS IN FLOOR & CEILING



KEY & DEFINITIONS.

B•T•U• OVER ALL COEFFICIENT OF HEAT TRANSMISSION IN B•T•U• PER HOUR PER SQUARE FOOT OF COMPLETE WALL SECTIONS INSULATED AS SHOWN ON DRAWINGS PER DEGREE F• DIFFERENCE BETWEEN OUT SIDE AND INSIDE AIR TEMPERATURE AT A MEAN TEMPERATURE OF 70° F•

B•T•U• UN•IN = B•T•U• OF THIS SECTION UNINSULATED.

B•T•U• INS• = B•T•U• OF THIS SECTION INSULATED AS SHOWN OR DESCRIBED.

% STOPPED• PER CENT OF HEAT TRANSFER STOPPED BY THE SILVERCOTE INSULATION IN THE SECTIONS ILLUSTRATED & DESCRIBED HEREIN•

ALL WALLS ON THIS PAGE ARE FIGURED AS STANDARD FRAME WALLS AS FOLLOWS: WOOD SIDING• WOOD SHEATHING• STUDDING• METAL LATH & PLASTER•

	B•T•U• UN•IN	B•T•U• INS	% STOPPED
WALL 1•	.26	.16	38 %
WALL 2•	.26	.12	54 %
WALL 3•	.26	.10	62 %
WALL 4•	.26	.10	62 %

to warp and twist, distort interior woodwork and blister paint and other interior finish from the surface of the walls.

Conditions such as are above described are becoming more and more prevalent throughout the country as indoor humidities are increased, and are receiving the attention and study of such institutions as The American Society of Heating and Ventilating Engineers, the American Society of Refrigerating Engineers, the U. S. Bureau of Standards, the Forest Products Laboratory, U. S. Department of Agriculture, the University of Minnesota, Syracuse University, Agricultural Experimental Station State of Ohio, and many other commercial and industrial laboratories.

The questions to be decided are—What insulation value has commercial conductive forms WHEN WET instead of WHEN OVEN DRY as all forms have been previously tested? What deteriorating effect does wet insulation and framing have upon the building structure? What can be done to prevent moisture from penetrating to the interior sections of building structures?

Silvercote Insulation Fabric, when applied in accordance with our specifications, to the interior of a structure, to a large extent, seals the walls against the penetration of moisture vapor created by modern heating and air conditioning and holds it suspended in the interior air. When applied on the outside it prevents the infiltration of moisture laden air through wind pressure to the interior sections of building structures.

During the winter heating season, with a high moisture pressure constantly exerted against the inside of the exterior walls, Silvercote Fabric, because it is highly moisture resistant, holds back the penetration of sufficient moisture so that, under ordinary winter conditions, a condensation point is not reached within the interior sections of wall structures, as the moisture held back renders the air within those sections sufficiently free from moisture content to make it capable of carrying its own moisture in suspension and the section, therefore, remains dry.

When Silvercote Fabric is applied to a standard wall in accordance with our curtain or "bow-in" method, THREE confined air spaces, each with an insulation value determined by the best laboratories in the country, and FOUR reflective surfaces implanted upon moisture resisting units $3\frac{1}{2}$-in. thick, are created within the structure. The wall section then becomes a non-absorbent, non-cellular, section consisting of air spaces and moisture resisting curtains with high thermal value, as evidenced by tests recorded in the American Society of Heating and Ventilating Engineers' Guide and the Refrigerating Data Book and transferred to the ratings given various wall sections in these specifications and drawings.

The section maintains a constant unvarying thermal value and remains in a dry condition.

SILVERCOTE INSULATION BOARD

DESCRIPTION—Silvercote Insulation Board is manufactured in a manner similar to wood fibre wallboard, to which is applied a top liner coated with pigment and polished to a highly reflective surface. This surface possesses the essential characteristics heretofore described for all Silvercote surfaces. The reverse side has a manila liner, dead level, beater sized and tacky, a perfect surface for painting. The finished board is $\frac{3}{16}$ in. thick and weighs approximately 560 lbs. per thousand square feet.

SIZES—Silvercote Insulation Board is made $\frac{3}{16}$ in. short of 4 ft. wide, to allow for a slight space between boards at the point of nailing. It is cut 6, 7, 8, 8½, 9, 10, and 12 feet long.

THERMAL VALUE—Tests run by Dr. J. C. Peebles, Armour Institute of Technology, give Silvercote Insulation Board a thermal value of .49 B.t.u.'s per hour, per square foot, per degree of temperature F., per commercial thickness of $\frac{3}{16}$ of an inch. The tests were run at a mean temperature of 70° F.

AS INTERIOR FINISH—Silvercote Insulation Board is especially designed as an interior finish for use over old walls of plaster or other materials, or for direct application to framing. It finds a particular use in the making of backgrounds for window displays, exhibits, and other temporary structures when decorative effects are sought. The fact that it is a two sided board, one side silver surfaced, waterproof and washable, the other especially prepared for painting, adds greatly to its usefulness. Wherever installed it provides decoration and insulation in one installation.

APPLIED TO FRAMING—For permanent installation to framing as interior finish, Silvercote Insulation Board is applied in the following manner:

The 4 ft. board spans three framing spaces (four framing members set 16 in. on centers). If it is desirable to throw the room enclosure into uniform panel spacing, insert additional studs or furring to receive the edges of the board for nailing. Fit and cut the boards to the required spacing and prepare for nailing, then cover the faces of the intermediate studs or framing members with Hedsel Cement or Emulsified Asphalt Adhesive. Put the boards in place, pressing them firmly against the adhesive covered framing, and hold in place with shoring or bracing; should remain until adhesive is set. Then nail at the outside edges and across top and bottom with 1 in. nails with ¼ in. heads spaced 3 in. apart. Cover joints with wood or metal batten moldings as taste or specifications require. This leaves the panel surfaces free from nails.

METAL JOINT MOLDINGS—Where metal joint moldings are used, the following procedure is observed. Firmly nail metal joint moldings to the center of studs or other framing faces on two adjoining sides of the panel to be set. Then cover the faces of intermediate studs or framing with Hedsel Cement or Emulsified Asphalt Adhesive. Place joint moldings over the two remaining sides of panel, and slide the panel into the joint moldings already set in place. Press firmly against intermediate studs covered with adhesive and hold in place with shoring or bracing until adhesive is set. Then firmly nail the exposed flanges of the two remaining joint moldings not previously fastened. Continue this procedure to the setting of the final panel where the process will be interrupted by the fact that both side moldings will be securely fastened in place. In this case omit the setting of the top or bottom molding and cover intermediate framing with adhesive including the top and bottom framing. Slide the top and bottom moldings on to the panel and spring the board into the slots of the moldings already fastened. The unnailed moldings will then be firmly held in place by adhesive.

Note: *The company can furnish wood filled metal moldings for base, wainscot and cap, for additional trim, if desired. These moldings are usually fastened with screws of the same metal finish as the moldings.*

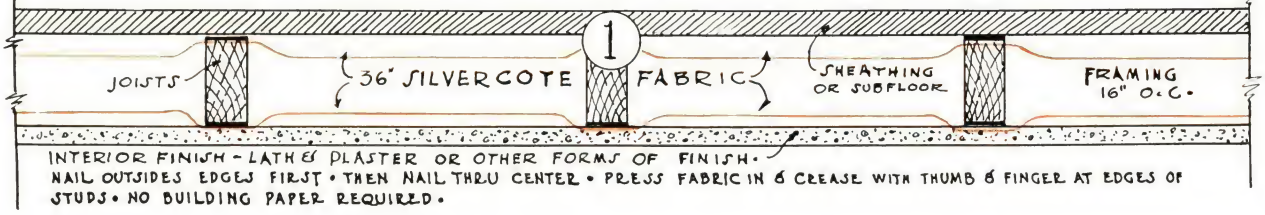
WITH METAL LATH AND PLASTER—Where Silvercote Insulation Board is used for insulation only and is to be covered with metal lath and plaster, as in some cold storage work, turn the silver like surface toward the inside of the wall and nail firmly at all framing bearings. Then coat the room side (back side of board) with Emulsified Asphalt and apply metal lath and plaster over this surface in the usual manner without furring, pressing the plaster through the meshes of the lath firmly against the asphalt-covered board.

Note: *This method of installation may be used in any case where Silvercote Insulation Board is shown on drawings as an interior finish, if a plaster interior is desired.*

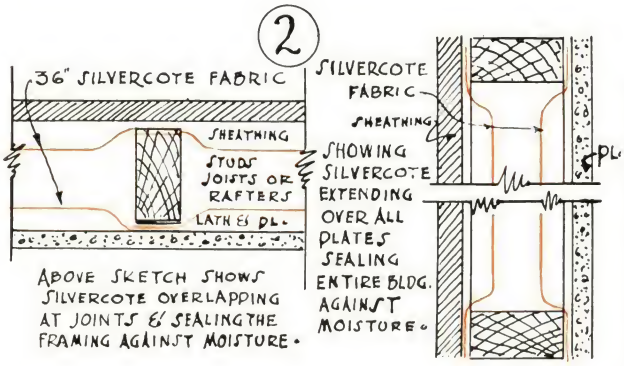
MISCELLANEOUS SECTIONS

CURTAIN METHOD OF APPLYING SILVERCOTE INSULATION FABRIC APPLICATION DETAILS • • COTTAGE SECTIONS • BRICK VENEER & ATTIC SECTIONS • •

36" SILVERCOTE FABRIC APPLIED TO WOOD FRAMING • STUDS • JOISTS • RAFTERS • •

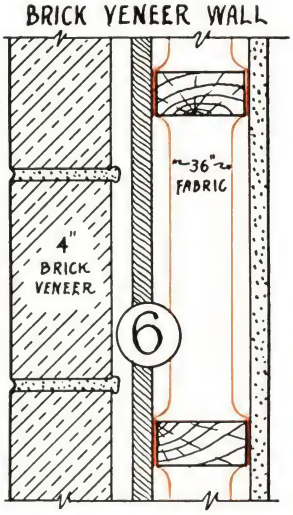


INTERIOR FINISH - LATH & PLASTER OR OTHER FORMS OF FINISH • NAIL OUTSIDES EDGES FIRST • THEN NAIL THRU CENTER • PRESS FABRIC IN & CREASE WITH THUMB & FINGER AT EDGES OF STUDS • NO BUILDING PAPER REQUIRED •



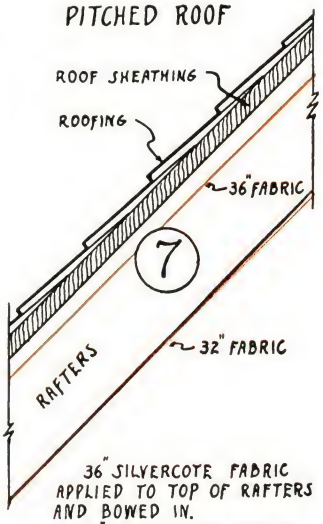
ABOVE SKETCH SHOWS SILVERCOTE OVERLAPPING AT JOINTS & SEALING THE FRAMING AGAINST MOISTURE •

BRICK VENEER WALL



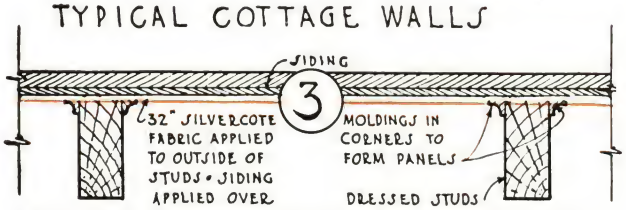
BRICK VENEER, SHEATHING, METAL LATH & PLASTER.

PITCHED ROOF

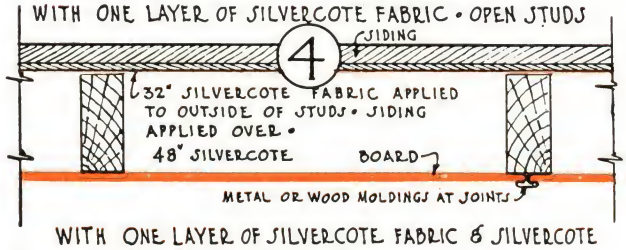


36" SILVERCOTE FABRIC APPLIED TO TOP OF RAFTERS AND BOWED IN.
32" SILVERCOTE FABRIC NAILED TO BOTTOM OF OPEN RAFTERS.

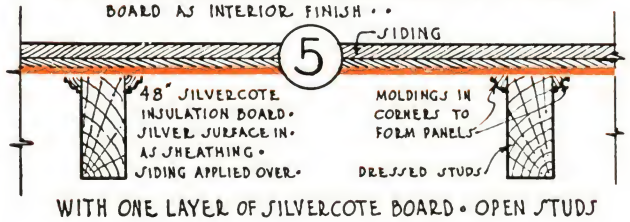
TYPICAL COTTAGE WALLS



WITH ONE LAYER OF SILVERCOTE FABRIC • OPEN STUDS

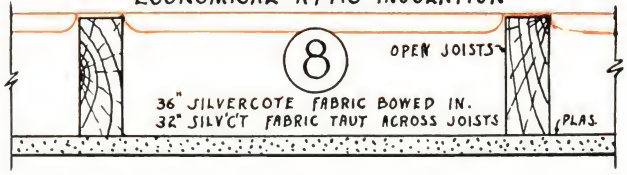


WITH ONE LAYER OF SILVERCOTE FABRIC & SILVERCOTE BOARD AS INTERIOR FINISH • •



WITH ONE LAYER OF SILVERCOTE BOARD • OPEN STUDS

ECONOMICAL ATTIC INSULATION



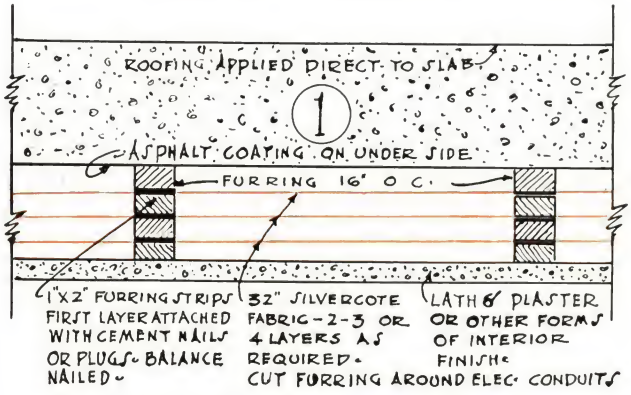
WALL 1 • FIGURED AS STANDARD FRAME WALL WITH WOOD SHEATHING & WOOD SIDING OUTSIDE

		B.T.U. PER SQ. FT. PER HR. PER DEG. DIFF. TEMP. PER IN.	B.T.U. PER SQ. FT. PER HR. PER DEG. DIFF. TEMP. PER INS.	% STOPPED
A • ONE LAYER FABRIC METAL LATH & PLASTER		.26		
B • TWO LAYERS FABRIC METAL LATH & PLASTER		.26		
WALL 2 •	SHOWING THE CORRECT METHOD OF OVERLAPPING SILVERCOTE JOINTS & COVERING PLATES TO ENTIRELY SEAL FRAMING AGAINST MOISTURE •			
WALL 3.		1.28	.46	64%
WALL 4.		1.28	.16	86%
WALL 5.		1.28	.35	72%
WALL 6	A. 1 LAYER FAB.	.22	.15	32%
	B. 2 LAYERS FAB.	.22	.11	50%
ROOF 7	A. 1 LAYER FAB.	.56	.20	64%
	B. 2 LAYERS FAB.	.56	.14	75%
FLOOR 8	A. 1 LAYER FAB	.69	.22	68%
	B. 2 LAYERS FAB	.69	.15	78%

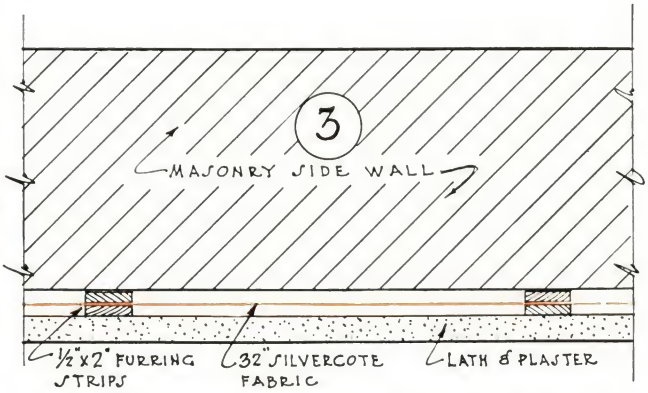
SPECIALTY CONVERTERS, INC., SILVERCOTE DIV.

MASONRY ROOF SLABS & WALLS

SHOWING SILVERCOTE PRODUCTS AS INSIDE INSULATION

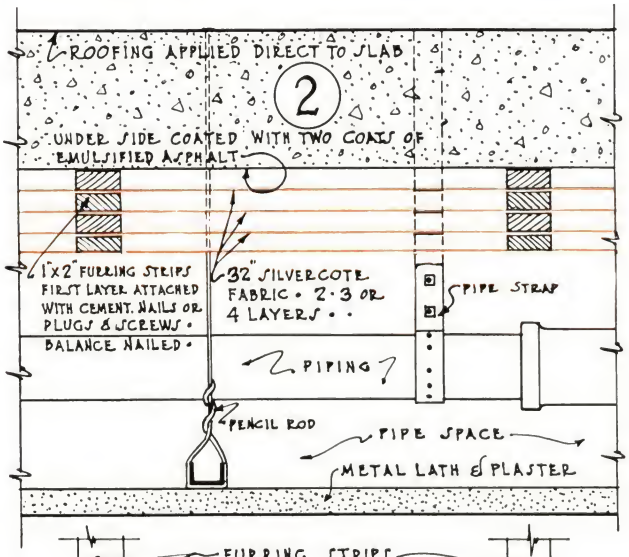


FLAT CEILING FREE FROM PIPING OR OTHER OBSTRUCTION.



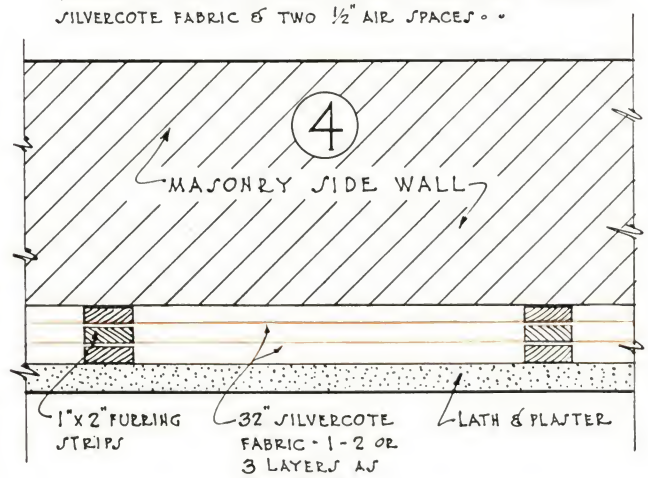
INSULATING THE INSIDE OF MASONRY WALLS

SILVERCOTE FABRIC & TWO ½" AIR SPACES..



SUSPENDED CEILING WHERE PIPE SPACE IS PROVIDED ABOVE.

IN CASE UNDER SIDE OF ROOF SLAB IS NOT FLAT BRIDGE FURRING ACROSS AT RIGHT ANGLES TO CONCRETE BEAMS WITH CROSS BRACING ON SURFACE OF BEAMS..



INSULATING THE INSIDE OF MASONRY WALLS

SILVERCOTE FABRIC & 1" AIR SPACES

	B.T.U. UN-IN.	B.T.U. INS.	% STOPPED
ROOF SLAB 1.			
A. ONE LAYER FABRIC	.33	16	50%
B. TWO LAYERS FABRIC	.33	.12	63%
C. THRE LAYERS FABRIC	33	.10	70%
ROOF SLAB 2.	.33	.08	76%
WALL 3.	32	16	50%
WALL 4.	.32	.12	62%

THE STANDARD LIME AND STONE COMPANY

INSULATION DIVISION

Specialists in the Manufacture and Installation of Capitol Rock Wool Home Insulation Products

First National Bank Building, BALTIMORE, MARYLAND

THE COMPANY AND EXPERIENCE BEHIND THE PRODUCTS

The Standard Lime and Stone Company, manufacturers of Capitol Rock Wool Home Insulation, has been prominent in the processing of various stone products since 1888. In its numerous plants, the company manufactures lime products, hydrated and finishing lime, Capitol Portland cement, magnesia, Capitol rock wool insulation, crushed stone, etc. The Company has built its reputation by using extra care in the selection of basic materials combined with scientifically controlled processing and manufacturing operations, thus making available the finest products of their kind.

The Insulation Division of this Company, long identified with the rock wool industry, has contributed many basic developments and by new improved processes is today producing a highly refined mineral fibre and, therefore, a more effective rock wool. The Company is manufacturing rock wool in all of the commonly accepted types. More important among the types are Batts and Grade "A" Blowing Fibre, each identifiable by the trade name "Capitol Rock Wool." Both types exhibit in a marked degree the physical properties and the stable chemical composition which makes Capitol Rock Wool, when installed in a home, an efficient and economical insulation against the loss of furnace generated heat in winter and the penetration of solar heat in the summer.

A NEW AND DISTINCTIVE PRODUCT IMPROVEMENT

(The Capitol Superfine Vaporproofed Batt)

Solves Important Construction Problems

Moisture-proofed—Moisture from wet plaster and other sources penetrating the wall from the inside, is stopped by the vaporproofing membrane which is permanently affixed to the batt. Moisture is turned back and released inside the house to be exhausted by normal ventilation.

Flanged Edge—On each side is a 1½-in. extension of the vaporproofing membrane, to protect the framing members and makes tacking in place a quick, easy job.

Insulating Efficiency—Same uniform density and high insulating efficiency as found in all Capitol Rock Wool Products. The vaporproofed membrane assures strength and permanence.

Sizes—Large size batts, 15x24 and 15x48 ins. are standard sizes, cut working time because they handle easily and are quickly installed.

Other Sizes—For studding and rafters spaced on 24-in. centers, the new Vaporproofed Batt is also available in a 23x15-in. size. (Special.)

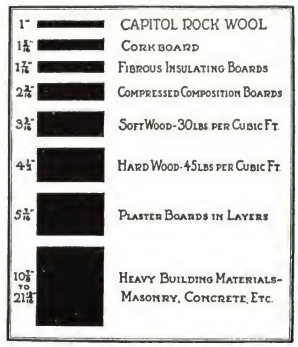
Two Thicknesses—Wall-thick, for maximum efficiency; also semi-wall-thick. (2 in.)

Fire Protection—All Capitol Rock Wool Products assure maximum fire protection. Also vermin-proof and sound-proof.

Permanent—Once installed behind the plaster base, the batt lasts as long as the house—never has to be replaced.

Comparative Co-efficiency of Capitol Rock Wool

The diagram, based on data compiled by United States Bureau of Standards, indicates relative thicknesses of various building materials required to equal the efficiency of Capitol Rock Wool. The remarkably low coefficient of heat transmission of Capitol Rock Wool is due to countless minute dead air cells. Transmission of both heat and sound is practically eliminated by these millions of tiny cells formed by interlacing of mineral fibres.



Installation of Rock Wool in Existing Homes

In walls of homes already built, Capitol Rock Wool Grade "A" Blowing Fibre is pneumatically introduced into the wall air spaces from either a portable electric blower, placed at any convenient point, or from a heavy-duty truck-mounted blowing unit. Whether the construction is shingle, clapboard, brick, or stone veneer, stucco or half-timbered, the blowing method is always the same. Approved insulators trained by the Company simply remove a few shingles, a piece of clapboard, or a few bricks for the insertion of the hose nozzle into the wall. Air spaces are packed solidly and completely with Capitol Rock Wool Grade "A" Blowing Fibre. A roof or attic floor is insulated the same way. There is no muss inside or outside the house. The average wall job takes only a day or two.

Installation of Rock Wool in New Homes

Buildings are insulated at the time of erection by the placing of Capitol Rock Wool Batts between the studding. The roofs are insulated either with batts between the rafters, or with the granulated fill known as Capitol Rock Wool Grade "A" Blowing Fibre, over the ceiling lath and plaster. The batts are of a size to fit snugly between framing members spaced 16 or 24 ins. on centers. They are of a thickness slightly less than studding to allow for the proper keying of the plaster. The weight of the batt is approximately 5 lbs. per cu. ft. wall thickness. When used on sloping areas the batts are supported in place with composition boards or reinforcing strips, in addition to the flanged edges.

F. E. SCHUNDLER AND COMPANY, INC.

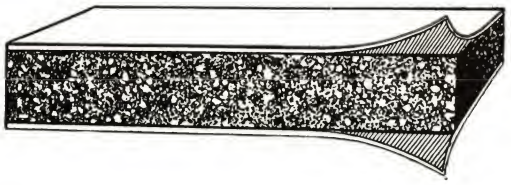
INSULATION DIVISION

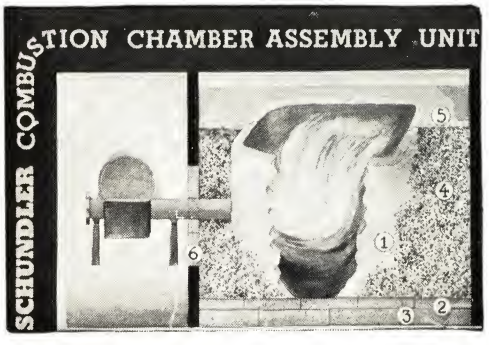
Pioneers and Specialists in the Development and Manufacture of Vermiculite Products

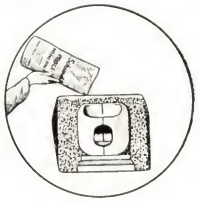
NEW YORK PLANT: 45-15 Vernon Boulevard, Long Island City, N. Y. JOLIET PLANT: 600 Railroad Avenue, Joliet, Ill.

SCHUNDLER PRODUCTS

Schundler Processed Vermiculite is the base of our entire range of insulating materials, including: Schundler Mica Pellets, Schundler Mineral Roof Insulation, Schundler Combustion Chamber Assembly Units, Schundler No. 121 Basic Bonded Slabs — Blocks — Pipe Covering — Special Shapes, Schundler Insulating Cements, Schundler Insulating Plaster and Schundler Light Weight Insulating Concrete. Each material was designed and perfected in Schundler laboratories and offers the architect and engineer outstanding performance in its particular field.







SCHUNDLER MICA PELLETS

Dual-Control Home Insulation

Crude vermiculite from Mount Zonolite in Montana is transformed by the Schundler Process into ideal loose-fill, free-pouring home insulation. Schundler Mica Pellets exert a positive control over heat travel by:

1. Radiation (the almost metallic lustre reflects heat rays).
2. Conduction (each pellet like a honeycombed accordion retards passage of conducted heat).
3. Convection (convection currents cannot circulate through the insulation).

Insulation values are 8% better than closest competitor by actual test. The negative capillarity of Schundler Mica Pellets holds condensation at its dew point without the danger of free moisture travel across the insulated area, or the formation of a sodden mass of insulation. *(Send for Prof. Gordon B. Wilkes' report.)* Specify Schundler Mica Pellets for constant density, absolute fireproof and verminproof properties, non-metallic and dielectric qualities, cleanliness, sound deadening and ease of application. No cutting or fitting is required. Odorless, sterile, mat-proof, non-fibrous—controlled reactions are independent of chemical formulae. Schundler Mica Pellets cannot be stretched or extended by air pressure. Pellets are packed in plainly marked bags containing 4 cu. ft. each. Between studding, floor beams or rafters spaced at 16 in. centers—one bag will cover approximately 27 sq. ft.—2 in. thick; 18 sq. ft.—3 in thick; 13½ sq. ft.—4 in. thick. Insist upon the name Schundler on every bag.

SCHUNDLER MINERAL ROOF INSULATION

Expanded Mica Pellets, scientifically processed and developed at 2000° F. furnace heat from selected crude vermiculite, form the insulating base of Schundler Mineral Roof Insulation. Each correctly sized Mica Pellet is coated with a thin film of high melting point asphaltum which effectively preserves each air cell against infiltration of all moisture—sealing full insulating efficiency within each tiny granule. The bottom felt face-sheet is of decided advantage in bonding the roof slabs to the deck, while the upper face-sheet insures perfect "bubble-free" adhesion for the protective roofing above. Schundler Mineral Roof Insulation will not expand at 150° F. nor will it contract at 40° below zero. Schundler Mineral Roof Insulation cannot decompose, mildew, disintegrate, warp nor twist, and is positive protection against vermin, frost and water.

Specification

Roof Insulation Material—Roof Insulation used under this specification shall be Schundler Mineral Roof Insulation (patented)—manufactured by F. E. Schundler and Co., Inc., 600 Railroad Avenue, Joliet, Ill., and delivered to the job in the original unbroken cartons of the manufacturer.

SCHUNDLER COMBUSTION CHAMBER ASSEMBLY UNITS

Specify the Schundler Method for oil burner combustion chamber installations for both new work and conversion jobs.

1. Insulating refractory pre-cast fitted combustion chamber.
2. Chamber floor.
3. Sound deadening, vibrationless cushion coat.
4. Schundler Mineral Fill in back of chamber walls for heat control.
5. Smooth finish cement coat.
6. Extra insulating brick for ash pit doors, baffles, corbels, etc.

All of the above, packed in strong wooden barrels with detailed installation instructions, comprise the Schundler Combustion Chamber Assembly Unit. It is complete with every material necessary for a perfect installation and the

entire job can be done in half an hour. Red hot in five minutes—chamber becomes incandescent immediately—no heat is lost as walls and floor are insulated. This scientifically shaped chamber guarantees less combustible flue gas, lower stack temperatures, no burner noise in rooms above, no spalling—a clean job and long life. Our Custom-Made Department will construct special shapes to meet your designs for boilers requiring unusual treatment.

SCHUNDLER NO. 121 BASIC BONDED SLABS—BLOCKS—PIPE COVERING—SPECIAL SHAPES

Schundler No. 121 Basic Bonded Insulation is constructed in the form of slabs, blocks, pipe covering and special shapes. It may be specified in all standard sizes as well as unusual designs for particular purposes. It has been developed and perfected to perform a wider range of duties than the limited properties of other block insulations will cover.

Schundler No. 121 Basic Bonded Insulation offers a crushing strength in excess of 105 lbs. per sq. in. at 600° F. Maximum temperature limit without shrinkage is 1600° F. Upper limit without structural failure—2000° F. Recommended for use behind refractories without protection. This material is unaffected by acids, insoluble in water and non-corrosive.

Precision machining of individual pieces from master billets sized 37 x 19 x 5 in. insures an exact fit and economical installation on each job.

Pipe covering sizes are identical with standards maintained for asbestos and 85° magnesia; canvas covers, bands and other accessories follow conventional practices.

Schundler No. 121 Basic Bonded Insulation is manufactured only at Plant No. 2, Joliet, Ill., under rigid laboratory control. It should be specified with confidence for all work within its temperature range. Our Engineering Department will furnish specifications to cover unusual applications upon request.

SCHUNDLER INSULATING CEMENTS

Five high temperature plastic insulations based upon Schundler Processed Vermiculite, each designed to meet specific conditions.

The following are very plastic and highly adhesive, will stick to any clean surface, and will retain a strong bond for temperatures below 1600° F.

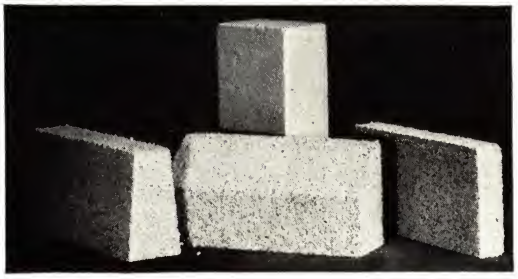
No. 200—For application where high insulating value and light weight are important. May be applied in thick coats, so that a 3 in. coating may be built up in two applications.

No. 300—Where greater mechanical strength is desired and less insulation value is needed. An effective insulator at low temperatures.

No. 400—Recommended as a finishing cement. Will not crack when applied in coats ½ in. or less in thickness. Greater insulating value. Surface may be waterproofed or painted. May be used as insulating lining in low temperature furnaces.

Improved Asbestos Cement—Recommended wherever a low cost, highly workable finishing coat is desired.

Schundler High Temperature Coating—Recommended for use in steel plants and for open hearth furnaces. Adapted for very high heats and metallurgical work. Unusually low conductivity, light weight, tremendous coverage.



SCHUNDLER INSULATING PLASTER

Schundler Insulating Plaster is a tamper-proof, premixed plaster—laboratory controlled as to setting time, troweling qualities, suction and plasticity. Its fire-retarding and insulating values are blended into the plaster with its sound-deadening properties—all guaranteed by its content of Schundler Mica Pellets.

Schundler Insulating Plaster has in its composition over 50% of air cells permanently separated from each other by tough, rubbery indestructible mica, over 50% of sound deadening traps to retard the passage of sound.

Schundler Insulating Plaster insures maximum wall strength, its deadening qualities are three times greater than neat gypsum, its coverage about two and one-half times greater than sanded gypsum plaster—and it has the approval of both the Department of Buildings and the Tenement House Department of the City of New York for fire-retarding purposes.

Manufactured by and shipped from the Oakfield, N. Y., plant of Oakfield Gypsum Products Corporation.

SCHUNDLER LIGHT WEIGHT INSULATING CONCRETE

Schundler Light Weight Insulating Concrete is a mixture of Schundler expanded vermiculite and blended Portland cement, producing a light weight cement slab, particularly adaptable for roof deck and floors, combining structural strength, insulating efficiency, ease of application, economy and permanency. Schundler light weight concrete slab weighs only one-third as much as regular concrete, thus reducing the dead load and decreasing the cost of supports and foundations. Maximum insulating efficiency is obtained by the use of this cement at a considerably lower cost than that required with other cementitious materials. Specify Schundler Light Weight Insulating Concrete for permanence. It is unsurpassed in its field.

Write for Complete Descriptive Bulletins on: Schundler Mica Pellets, Schundler Mineral Roof Insulation, Schundler Combustion Chamber Assembly Units, Schundler Insulating Plaster, Schundler, No. 121 Basic Bonded Slabs—Blocks—Pipe Covering—Special Shapes, Schundler Insulating Cements, Schundler Light Weight Insulating Concrete.

Dual-Control Insulation

Insulation with a REPUTATION

Identified by Its "Golden Glitter"

THE ZONOLITE COMPANY

GENERAL OFFICES

DETROIT, MICH.

PLANT: LIBBY, MONT.

MAKERS OF INSULATION PRODUCTS

ZONOLITE INSULATION.
ZONOLITE INSULATING PLASTER.
ZONOLITE AIR DUCTS.
Sound Absorbing and Insulated.

ZONOLITE
TRADE MARK REGISTERED

ZONOLITE-ASPHALT ROOF BLOCK.
ZONOLITE ACOUSTICAL PLASTER.
ZONOLITE INSULATING CEMENT.
ZONOLITE CONCRETE MIXTURE.

Zonolite Insulation for Homes

The Only Natural Dual Insulation Known—Zonolite is a micaceous, non-metallic mineral (aluminum magnesium silicate) expanded many times through a special process by the application of intense heat. It insulates both by its multiple dead-air cell construction and by its glittering, flaky reflective surfaces. It is an efficient, permanent barrier to the passage of heat by conduction, convection or radiation.

Uniform Density—The density of Zonolite is uniform, tamper-proof. Its insulating value is the same in the walls or on the ceiling as when it left the factory. Zonolite cannot be "fluffed" or stretched when being installed; it flows evenly, filling every nook and corner with a "tailor-made" insulation of unsurpassed efficiency.

"U" factor tests at the College of the City of New York showed that Zonolite, installed in a standard wall section, reduced the heat loss through that section by 73.1%. In a "twin" house test in Detroit, a Zonolite-insulated home burned 38% *less* fuel than an identical home uninsulated, and the temperature fluctuation was held within 2° as against 18° in the uninsulated one. Such tests prove the efficiency of Zonolite under conditions of actual use.

Zonolite Rates 100% on Every Insulation Requirement—Zonolite Insulation is *Rotproof* and *Fireproof*—a 100% mineral product. *Verminproof*—rats, mice, termites, or insect larvae will not eat it or nest in it. *Light weight*—weighs approximately 6 lbs. per cu. ft.

Sound absorbing—tests by V. O. Knudsen, acoustical authority, show Zonolite to be high in sound absorption and sound insulation: 3¾ ins. of loose Zonolite, in panels of 3 ft. by 3 ft., 6 ins. showed a coefficient of sound absorption of 0.58 at a frequency of 512 d.v.

Dielectric — a test by J. C. Peebles, Armour Institute of Technology, showed that 20,800 volts were required to puncture a 1-in. layer of Zonolite between 1-in. brass balls. *Safe*—no danger of silicosis, lead poisoning, sores or boils.

Chemically inert—tests of every description prove that Zonolite will not deteriorate in any way. *Odorless*—will not absorb or give off odors under any conditions. Zonolite forms a *thick* insulation; is approved by leading air conditioning firms for use with their units.

Economical to Install—Zonolite is easily installed in attics by blowing or pouring directly from the bag between the joists or rafters. When being placed in walls, Zonolite can either be poured or blown. Whichever method is used, Zonolite fills completely, with an unchanging, uniform density. Your local Zonolite Representative will furnish accurate estimates of installation costs.

Coverage—Zonolite is sold in bags containing approximately 4 cu. ft. and weighing approximately 24 lbs. per bag.

The following table gives the approximate coverage per bag:

Depth of fill	Coverage in square feet per bag	
	No joists or studs	Joists or studs 16 in. on centers
2 in.	24 sq. ft.	26 sq. ft.
3 in.	16 sq. ft.	17½ sq. ft.
3½ in.	13½ sq. ft.	15 sq. ft.

Zonolite Insulating Plaster

Insulates and Plasters in One Job

A prepared mixture of carefully selected calcined gypsum and Zonolite. A growing interest in insulation is bringing this plaster into widespread use as it provides an inexpensive insulation in cases where economy or construction difficulties render a complete insulating job impractical. Tests made by J. C. Peebles of the Armour Institute of Technology show the K factor of Zonolite Insulating Plaster as .90.

Since it contains no sand, Zonolite Insulating Plaster is very light in weight—Zonolite Plaster weighs only 10 lbs. per yard on wall—thus it is extremely easy to handle and spreads rapidly. It is uniform, since it is not dependent upon varying grades of sand. It possesses a high degree of sound insulating value and is free of map cracks and checks.

Because of its high insulating value, its lightness in weight, its high resistance to fire and its acoustical properties, it is very desirable for use in public buildings and institutions.

Zonolite Insulated Air Ducts

(Patents Applied for)

Recognizing insulation defects of the ordinary air duct, Zonolite Engineers decided to perfect the product as a whole rather than simply to engineer a new style of insulation for this type of work. In using the conventional type of sheet metal construction, air velocity is greatly reduced because of the necessity of covering the inside of the duct with sound absorbing material, and as most of these coverings are not fireproof, a fire hazard is introduced. In Zonolite patented style of construction, the duct is constructed of a specially designed wire mesh and is then covered with Zonolite Fireproof Air Duct Insulation, which has unusual insulating and sound absorbing values and eliminates the necessity for an inner lining. Tests by leading air conditioning firms show a reduction in noise of 1½ decibels per lineal foot of duct. With the Zonolite patented type of duct, it is now possible to use a much smaller duct and higher air velocities, which make for more pleasing, practical, and economical home and building installations.

Zonolite Air Ducts are readily made and erected by local sheet metal shops using ordinary sheet metal tools.

Zonolite Insulating Cement

Ideal for insulating tanks, boilers, furnaces, ducts, pipes, etc., and is efficient in temperatures from sub-zero to 1600° F. Comes ready mixed and requires only the addition of water. 100% reclaimable. Tests show a thermal conductivity of about .59 at a temperature differential of 85° F.

Zonolite Concrete Mixture

Write for our recommendations and formulas on specially prepared Zonolite Concrete Mixes for use in floors of cold storage buildings, annealing furnaces and ovens and places where a light weight aggregate is desired.

UNITED STATES MINERAL WOOL COMPANY

Manufacturers of Home and Industrial Insulation Products
Since 1881

TELEPHONE
Dearborn 8437

9 South Clinton Street
CHICAGO, ILL.

FACTORIES AT SOUTH MILWAUKEE, WIS. AND STANHOPE, N. J.
NEW YORK OFFICE: 299 Madison Avenue

THE INSULATED HOME IS COOL IN SUMMER—WARM IN WINTER

United States Mineral Wool

United States Wool is made by a process which converts the basic material, while in a molten condition, into a fibrous state. It is recommended for lining walls, floors, roofs and ceilings and for use whever a continuous unbroken job of insulation is desired.

Advantages of United States Wool for House Insulation

(1) United States Wool builds up a very high resistance to the passage of heat, cold and sound through the sidewalls, roof and attic floor.

(2) In winter, United States Wool prevents the escape of heat through walls and ceilings of the home. It reduces fuel expense at least one-third.

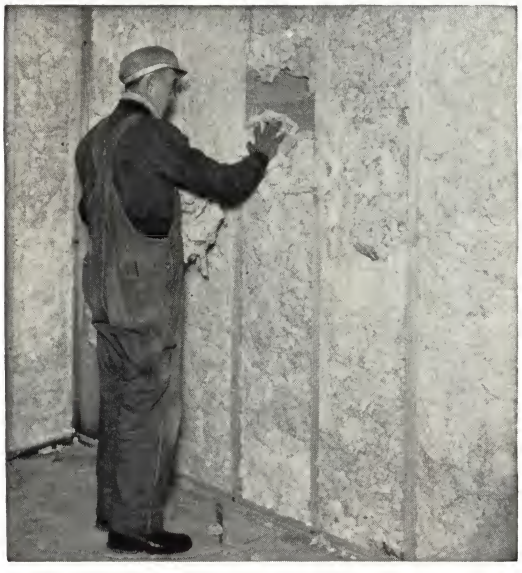
(3) In summer, United States Wool repels outside heat, making the home many degrees cooler.

(4) United States Wool is widely used as a sound-deadener and will prevent, to a great degree, the transmission of sound from within or without the house. It is especially recommended for sound-proofing the dividing walls and floors in apartments.

(5) In sidewalls, United States Wool prevents circulation of cold drafts, thus preventing heat loss through convection or circulation of air—board or blanket forms of insulation cannot prevent circulation of air in sidewalls.

(6) United States Wool is absolutely indestructible, vermin-proof, and fireproof. It forms an effective fire barrier.

(7) United States Wool is reasonable in cost and can be economically and efficiently installed by unskilled labor.



Hand Packing Loose United States Wool in Sidewall

This method of installing United States Wool assures a wall that is 100% full and *permits inspection before the wall is lathed and plastered*

Hand Packing of Loose United States Wool

(New Construction)

For best results, Loose United States Wool should be hand packed in the sidewalls to full stud thickness before the lather comes on the job. It w ill remain in place between the studs without settling.

The great advantage of the hand packing method of applying rock wool insulation is that a firmly packed wall—100% full—is assured. Furthermore, it permits inspection *before* the wall is lathed and plastered.

For attic floor insulation (either new or old homes) a 3-inch layer of Loose United States Wool should be placed upon the laths of the top floor ceiling.

Granulated United States Wool

Granulated United States Wool is made in pellet form and is recommended for use wherever peculiar construction necessitates the use of an insulating material that pours readily into place.

Covering Capacity

For best results, we recommend that both loose and granulated wool be packed to a density of 8 lbs. per cubic ft.

United States Quilts

United States Wool Quilts are recommended where construction permits only a 1-in. or 2-in. thickness of insulation. The Quilts are made of a layer of mineral wool between sheets of heavy Kraft paper, stitched at intervals to keep the wool in place.

Furnished in rolls of standard widths.

Bats

We carry a complete line of rock wool bats. For ease of application, many contractors prefer rock wool insulation in bat form.

OTHER INSULATING PRODUCTS

We manufacture an efficient High Temperature Cement of which slag wool is the chief ingredient. Recommended for all types of industrial equipment, boilers, pipes and similar purposes where a plastic insulation can be used and a continuous unbroken layer of insulation is desired. Further information on request.

We also furnish Rock Wool Blankets, with or without wire, for all high and low temperature requirements.

UNIVERSAL INSULATION CO.

Miners of Vermiculite and Asbestos
Manufacturers of Unifil Vermiculite Products

MINES
LIBBY, MONT.

EXECUTIVE OFFICES
CHICAGO, ILLINOIS

MANUFACTURERS

CALIFORNIA
Los Angeles: Universal Insulation Co. of California, 5950 Walker Ave.
COLORADO
Denver: United Materials Inc., 1122 Broadway
DISTRICT OF COLUMBIA
Washington: Cary Mfg. Co., 596 W. St., N. E.
ILLINOIS
Chicago: Universal Insulation Co., 2601 W. 107th St.
IOWA
Des Moines: P. C. Baridon & Sons Inc., 100 S. W. Second St.
KANSAS
Wichita: United Materials Co., 320 W. First St.
MINNESOTA
Minneapolis: Universal Insulation Co. of Minnesota, 2821 E. Hennepin Ave.
MISSOURI
Kansas City: United Insulation Co., 911 Mulberry St.
MONTANA
Great Falls: Robinson Insulation Co., 12th St., North and River Drive
OKLAHOMA
Oklahoma City: West Insulation Co., 301 No. Western Ave.
Tulsa: Empire Roofing & Insulation Co., 302 So. Norfolk St.
OREGON
Portland: Asbestos Supply Co., 221 South West Front Ave.
TEXAS
Dallas: United Materials Inc., 2304 Summer St.
WASHINGTON
Seattle: Asbestos Supply Co., First and Jackson Sts.
Spokane: Asbestos Supply Co., 10 So. Bernard St.
Tacoma: Asbestos Supply Co., 1720 Pacific Ave.

BUILDING AND INDUSTRIAL INSULATIONS

Unifil Granular Fill Insulation
Unifil Insulating and Acoustical Plasters
Unicon Lightweight Insulating Concrete
Universal Asbestos Cement
Uniplastic High Temperature Insulating Cement
Unibloc Monolithic High Temperature Insulation
Unikast Insulating Bricks
Unikast High Temperature Insulating Concrete

UNIFIL GRANULAR FILL INSULATION

Characteristics—Unifil is a dry, granular, inert, mineral substance which is made by exploding vermiculite ore at a temperature of 2000° F. It is fireproof, rotproof, verminproof, termiteproof, and rodentproof. Unifil is chemically inert and is a non-conductor of electricity. It does not attract moisture and does not deteriorate if wetted. It weighs about 5½ pounds per cubic foot and has excellent sound deadening properties, as well as being a highly efficient heat insulation material.

High Insulating Efficiency—The thermal conductivity of Unifil is 0.263 B.t.u. at a mean temperature of 90° F. Unifil has a dual insulating value. It not only has high resistance to flow of heat due to millions of tiny dead air cells entrapped between the layers of each granule, but it also reflects heat from its bright surfaces. The average 3-in. installation of Unifil over top floor ceilings of buildings reduces fuel consumption 15-25% and keeps buildings from 8°-15° cooler in summer. When sidewalls are also insulated with Unifil, additional fuel savings of 10-15% usually result and greater reductions in summer temperature are also obtained.

Installing Unifit Between Ceiling Joists

Foolproof Application—One most important feature of Unifil is that it cannot be fluffed up, stretched, or packed. Because Unifil is POURED into place between the framing members it automatically assumes its most efficient density or insulating value.

Uses—Unifil is an excellent material for building and refrigeration insulation. It can also be effectively used for sound deadening between walls and floors. When used as an aggregate with Portland cement, asphalt, gypsum, and other binders, it imparts lightness, high insulating value, and acoustical properties to the formed product.

Specifications for Application—Unifil is simply POURED to any desired thickness (a minimum of 3 in. is recommended) between ceiling joists, into the sidewalls of frame buildings or into the cores of hollow tile or concrete blocks. Unifil is packed in strong paper bags, each containing 4 cubic feet and weighing about 25 pounds.

PC-UNIFIL PLASTER

An insulating and acoustical plaster composed of Portland cement and Unifil aggregate. It weighs only 14 pounds per square yard compared to 42-70 for ordinary sanded plasters and has many times more heat insulating value than ordinary plasters. When rice brush, float, and other rough finishes are applied on this plaster, exceptionally high sound absorption values are obtained. It has high resistance to cracking due to its slow drying, is water resistant and can be applied directly to masonry and concrete surfaces. The exceptional slip, plasticity and lightness imparted by the Unifil aggregate to this plaster enable the plasterer to cover greater areas with less effort.

GC-UNIFIL PLASTER

An insulating and acoustical gypsum plaster in which part of the sand is replaced by Unifil aggregate. It weighs only 18 pounds per square yard and has twice the coverage of ordinary plasters. It has double the insulating value of ordinary plasters and four times more sound deadening value. When rice brush or other stippled finishes are applied to this plaster, exceptionally high sound absorption values are obtained. The exceptional slip, and workability of this plaster enable the plasterer to cover greater areas with less effort.

UNIVERSAL ASBESTOS CEMENT

Composed mainly of Unifil vermiculite particles and asbestos, this cement has more insulating efficiency, twice the coverage and better workability than ordinary asbestos cement.

UNIPLASTIC HIGH TEMPERATURE INSULATING CEMENT

A highly efficient, plastic, insulating cement designed for use on heated surfaces up to 1900° F. Composed of Unifil granules and suitable binders. It has remarkable adhesiveness and dries almost without shrinkage. Its thermal conductivity is 0.62 at 200° F. Its coverage is four times greater than asbestos cement and its efficiency is also many times greater.

For Complete Specifications Write Nearest Unifil Manufacturer

UNICON LIGHTWEIGHT INSULATING CONCRETE FOR BUILDING PURPOSES

Description—Unicon is a lightweight insulating concrete in which Unifil aggregate takes the place of all or a part of the usual aggregates. Unicon is fireproof, rotproof, and termite-proof. It is chemically inert and has no corrosive effect on reinforcing steel or steel decking. Unicon does not disintegrate when wetted and can be soaked in water and exposed to sub-zero temperatures without cracking or spalling.

Uses—Unicon may be used in any type of building construction requiring a material having insulating efficiency or lightness. It may be used for floor, roof or wall construction in cold storage warehouses, refrigerators, residences and commercial structures. It may be cast or formed into blocks, slabs or any other desired shape for such applications. Unicon serves excellently as a nailing base in roof, floor and wall construction.

Precast Slabs—Unicon slabs are particularly well adapted for use as roof deck because they impart insulating efficiency and lightness to the roof and have ample strength for such construction. A Unicon roof slab having a 35 lb. density weighs less than one-fourth as much as ordinary concrete and has twelve times more insulating efficiency.

A reinforced Unicon slab 60x24x3 in. tested by Rush Roberts Engineering Co. showed an ultimate strength of 266 lbs. per sq. ft. uniform load. A Unicon slab 60x24x4 in. produced an ultimate strength of 440 lbs. per sq. ft. uniform load.

Lightweight Roof and Floor Fill—Unicon is very well adapted for use as a floor or roof fill. It is especially well suited for fill in load bearing structures as Ipan, Holorib, Mahon, Milcor, Robertson and Truscon constructions. It is also well adapted for use structurally over metal lath. Unicon No. 26 is recommended for roof fill and No. 50 for floors. Unicon provides excellent heat insulation and greatly reduces the passage of sound through floors. It greatly reduces the dead load in a structure and thus provides considerable saving in structural steel. When used as an insulating roof fill Unicon can be applied at varying thicknesses to give the roof proper drainage.

Insulating Efficiency, Strength and Weight—The insulating efficiencies and strengths of Unicon compositions are dependent upon their densities. Insulating efficiency increases as density decreases and strength increases as density increases. Variations in the composition of Unicon can be made to produce the desired strength and insulating efficiency to meet the requirements of the job. The lighter Unicon mixes have half the insulating value of cork for equal thicknesses. Unicon having a density of only 26 lbs. per cubic ft. has a thermal conductivity of 0.75 and a compression strength of 150 lbs. per sq. in. Unicon weighing 35 lbs. per cu. ft. has a conductivity of 0.86 and a compression strength of 175 lbs. per sq. in. Unicon weighing 50 lbs. per cu. ft. has a conductivity of 1.10 and a compression strength of 600 lbs. per sq. in. These three mixes have sufficient insulating efficiency, lightness and strength to serve most of the requirements of building construction.

Steel I-Pan Floor Ready for Unicon Floor Fill

Steel Frame House Constructed Entirely of Unicon Slabs in 4 Days

Unicon Roof Deck Being Placed Over Metal Lath Deck of Lurie Steel House

Placing Unicon on Concrete Roof Deck, Henrotin Hospital, Chicago, Ill.

Unicon Slabs in Walls and Roof of Steel Frame Residence

Unicon Monolithic Section of Roof

Unicon Precast Slabs, Elmwood Park Theatre, Elmwood Park, Ill.

For Complete Specifications Write Nearest Unifil Manufacturer.

MEMORANDA

CELOTEX

REG. U.S. PAT. OFF.

INSULATING CANE BOARD PRODUCTS

THERMAX

TRADE MARK

FIRE-RESISTING INSULATING SLABS

WORLD'S LARGEST MANUFACTURER OF STRUCTURAL INSULATION

THE CELOTEX CORPORATION

• 919 • NORTH • MICHIGAN • AVENUE • CHICAGO • ILLINOIS •

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Foreword

EXPERIENCE—The Celotex Corporation is the world's largest manufacturer and distributor of thermal insulation products and acoustical materials. Intensive research and field investigation, coupled with world-wide experience, have made Celotex Products foremost in the building field. Every phase of the utilization and application of insulation has been exhaustively studied, and the products of this Corporation inspire the confidence of architects, dealers, builders, decorators, and owners. Installations have been made in more than 600,000 buildings, representing every type of construction.

Inclusion of Thermax Fire-resisting Structural Insulation among the products distributed by The Celotex Corporation makes our line of insulation materials complete. This one corporation offers the architect the scientifically correct product to solve every conceivable insulation problem.

DISTRIBUTION—Celotex Cane Fiber Products are marketed nationally through lumber dealers. Stocks are maintained in all principal cities in the United States and in most foreign countries. Celotex Roof Insulation is available also through reliable roofing contractors everywhere.

Thermax is distributed nationally through approved applicators in all principal cities. Consult your local Celotex representative for further information.

SERVICE—The Celotex Corporation maintains Building Service Departments in connection with its General Sales office in Chicago and in eight other principal cities. Architects are invited to consult our trained engineers. All local representatives are experienced in the insulation and noise abatment fields and are qualified to co-operate (without obligation) with the architect in the establishment of basic requirements or the working out of their various problems.

Manufacturing Facilities

MARRERO, LA.—Celotex Cane Fiber Products are manufactured at Marrero, La., just across the Mississippi from New Orleans. In the heart of the sugar cane growing district, the plant is also strategically located with respect to economical transportation facilities by water and rail. More than one billion square feet of Celotex have been produced.

METUCHEN, N. J.—The Celotex Corporation manufactures Celotex Cemesto, Celotex Traffic Board, Celotex Promenade Traffic Top, and Celotex Mil-flor Traffic Top at its recently acquired plant at Metuchen, N. J. The fireproof masonry and steel plant contains about five acres of factory space. Only 25 miles from New York City, the Metuchen factory offers ideal distribution facilities from the center of the Eastern industrial area.

CHEWELAH, WASH.—The large, up-to-date Thermax plant is located at Chewelah, Wash., heart of the source of its raw materials—timber and refractory cement.

MARIETTA, OHIO—For the manufacture of Calicel and Calistone (see Celotex Acoustical Products catalog) the Celotex Corporation maintains an extensive plant at Marietta, Ohio.

See Back Cover for List of Branch Sales Offices

PRODUCTS

CELOTEX CANE FIBER INSULATING MATERIALS—In a choice of sizes and shapes—from boards 4x12 feet in area and planks 6 in. wide by 12 feet in length to small unit tiles—Celotex Cane Fiber Insulating Materials are made for both structural and decorative uses. Applications of these rigid, insulating cane fiber products range from boards used as sheathing to lath units, to colored, textured self-finishes of various standard shapes and dimensions for interior wall treatment.

GUARANTEE—Celotex Cane Fiber Insulation products are backed by an all-inclusive 10-point, Life-of-the-Building Guarantee:

1. To maintain insulating efficiency for the life of the building.
2. To provide structural strength.
3. To give lasting fuel economy.
4. Against destruction by termites.
5. Against destruction by dry rot.
6. To be water repellent.
7. To reduce noise.
8. Not to settle away from the framework.
9. Against loss of insulation efficiency upon painting or plastering.
10. To meet Department of Commerce commercial standards CS42-32 and U. S. Federal specifications LLL-F321a.

The products embraced in this guarantee are: Building Board, Vapor-seal Insulating Sheathing, Lath, Finish Plank, and Tile Board when applied in accordance with Celotex Specifications. The Celotex Life-of-the-Building Guarantee, when issued, applies only within the boundaries of continental United States.

HARD BOARD PRODUCTS—For wall surfaces subject to unusual wear and tear, abrasion or bodily contact, Celotex offers a series of stiff and tough, non-insulating hard boards. Some surfaces are smooth; others are textured; one is stamped to simulate tile. The hard boards are highly resistant to moisture and warping and are adaptable to such varied uses as wainscoting, paneling, counter tops, furniture, form boards, etc. Colors range fram natural to wood tones to black. Several are suitable for painting or enameling.

CELOTEX TRAFFIC TOP PRODUCTS—Traffic Top is extremely wear-resistant cane fiber insulation board, impregnated with selected bitumens by a special process. There are two standard types—**Celotex Promenade Traffic Top** and **Celotex Mil-flor Traffic Top.**

Promenade, either unpainted, black, green, or red, is designed for use as a surface on roofs, play courts, basement floors, and other surfaces subject to foot traffic. Mil-flor's chief use is for medium duty traffic surface for factory floors. Not recommended where subject to excesses of oil or in heavy industry plants subjected to severe abuses from abrasion by heavy machinery parts or heavy factory trucks with narrow steel wheels.

CELOTEX TRAFFIC BOARD—This cane fiber board is impregnated with bitumens to provide a tough, resilient, moisture resistant board. In the construction of foundations, bridges, tunnels, reservoirs, and floors, it is used as a protection for the waterproofing and dampproofing membrane. In hotels, schools, churches, offices, apartments, and homes it is applied direct to the sub-floor to provide cushioning and sound deadening under foot traffic and protection to the wood block flooring where moisture conditions prevail.

FLEXCELL EXPANSION JOINT—Wherever expansion joints are required in concrete work, Flexcell Expansion Joint, a product made of asphalt-impregnated Celotex Cane Fiber Board, has outstanding advantages. Under compression, it will not extrude. Resilient; easily cut with hand or power saw. Neat finished joint requires no trimming. Durable.

CEMESTO—Celotex Cane Fiber Insulation Board, ½ to 2 inches thick, in sizes up to 4x12 feet. Cemesto surfaced one or both sides with a coating of asbestos-cement, is moisture and fire resistant. This board has a waterproofing treatment that makes it especially desirable for industrial processing rooms maintaining high humidities or as an exterior finish. Its hard surface and exceptional rigidity and strength suggests its excellent use for partition work in wood frame and steel construction.

THERMAX—This fire-resisting structural insulation, made of cement-coated tough wood shreds, is the only structural insulation board or slab to enjoy the Underwriters' Laboratories classification as incombustible. In standard 20 inch width, Thermax is made in lengths up to 108 inches and in 1, 2, or 3 inch thicknesses. High in insulation value, it is adaptable as sheathing, roof boarding, plaster base, partition and furring slabs, floor and ceiling slabs, insulation over roof decks, and insulating structural roof slabs.

ACOUSTICAL MATERIALS—Celotex manufactures and distributes a complete line of acoustical materials of varied unit shapes and sizes, in surface finishes adaptable to almost any architectural treatment. For complete description and specific data on these products, see our acoustical catalog.

TABLE OF PRODUCTS AND RECOMMENDED USES

THERMAL INSULATING PRODUCTS

PRODUCT	SIZES (Feet, Unless Otherwise Indicated)	THICKNESS	DESCRIPTION	MAJOR USES
CELOTEX BUILDING BOARD Pages 10, 12, 13, 15, 16	4 x 4, 4 x 5, 4 x 6, 4 x 7, 4 x 8, 4 x 8½, 4 x 9, 4 x 9½, 4 x 10, 4 x 12 Also available on special order in 6 and 8 ft. widths in ½" thickness	½", 1" Standard. 1½" and 2" on special order.	Each board has two distinct surface textures; one side with sanded finish, the other side with a tapestry texture. (No. 53 finish.) Neutral tan color. Also furnished on special order in finishes Nos. 55, 75 and 82 with one surface suitable for interior finish. (See description of finishes in Table 1, Page 6.) All edges square. Ferox treated. (6 ft. and 8 ft. widths only in textured or No. 82 finish.)	Structural insulation used as exterior finish; as wall sheathing under brick veneer, siding, wood shingles or stucco; as roof sheathing on pitched roofs under various types of roofing; interior finish; base for plastic paints, wall coverings and other interior decorative finishes. May also be grooved, beveled, etc.
CELOTEX VAPOR-SEAL INSULATING SHEATHING Pages 9, 10, 12	4 x 7, 4 x 8, 4 x 8½, 4 x 9, 4 x 9½, 4 x 10, 4 x 12	25/32"	A waterproofed, vaporproofed insulating sheathing; edges square; all sides and edges coated with asphalt; one side finished with aluminum powder over asphalt. Ferox treated.	Structural insulation used as wall sheathing under brick veneer, siding, shingles or stucco; also as roof sheathing on pitched roofs under various types of roofing.
CELOTEX INSULATING LATH Pages 9, 14	18" x 48"	½", ¾", 1"	A patented insulating plaster base. Long edges shiplapped; all edges beveled to reinforce plaster against cracking and to eliminate unsightly lath marks; not sanded; extra rigid; all Lath branded. Ferox treated.	Continuous insulating plaster base for walls, partitions and ceilings.
CELOTEX FINISH PLANK Pages 6, 18, 20	Widths: 6", 8", 10", 12", 16". Lengths: Standard 6', *7', 8', 9', 10' and 12'. *Sizes furnished on special order.	½" ,¾" ,1"	Made from Ferox treated cane fiber board with long edges beveled and beaded. Furnished with Type Double A, reversible beveled, interlocking joint in ½" thickness whereby either side can be exposed, offering the possibility of many unusual designs. (See Table 2, Page 6.) Available in the following colors and textures: Nos. 53, 55, 60, 75 and 82 as described in Table 1.	Decorative wall and ceiling finish. Provides efficient insulation. (Frequently used in combination with other Celotex interior finish products such as Celotex Tile Board, Celotex Mouldings and Ornaments, and Celotex Building Board.)
CELOTEX TILE BOARD Pages 6, 19	*6" x 6", *6" x 12", *8" x 8", *8 x 16", 12" x 12", 12" x 24", 16" x 16", 16" x 32", *18" x 32", *16" x 48", *18" x 48", 24" x 24" 24" x 48" *Sizes and thicknesses marked * are not carried in stock and are furnished on special order ONLY.	Type Double A reversible, beveled joint in ½" thickness only. ¾" and 1" Tile furnished only in Types A, B, C or D Joints and on special order only. (See Table 5.)	Ferox treated cane fiber insulation board in Tile-Sized units with beveled edges. Furnished with Type Double A reversible bevel joints in ½" thickness only, whereby either side can be exposed, thus offering the possibility of many unusual designs. Also furnished with other joints in ½", ¾", and 1" thicknesses on special order. (See Table 2, Page 6.) Available in finishes Nos. 53, 55, 75 and 82 as shown in Table 1.	Decorative wall and ceiling finish. Provides efficient insulation.
CELOTEX ROOF INSULATION Pages 26, 27, 28	22" x 47"	½", 1", 1½", 2" and multiples thereof up to 4" (8-ply).	Ferox treated Celotex cane fiber insulation board. Square edges; also furnished shiplapped and stapled on special order, 1" or more thick.	For roof insulation under built-up roofing on flat roofs; under certain types of roofing on pitched roofs, and as a protection course for membrane waterproofing.
CELOTEX VAPOR-PROOFED LOW TEMPERATURE INSULATION (VLTI) Page 31	18" x 36" Also available on order 18" x 18", 9" x 36" and 12" x 36".	1", 1½", 2" and multiples of ½"	Low density, Ferox treated Celotex. Edges dipped in asphalt and insulation blocks completely incased in waterproofing, vaporproofing membrane. Edges square. Conductivity, 0.30 Btu per inch.	Used as cold storage insulation and for general low temperature insulation. Also for severe moisture conditions, as in humidified residences. Do not use where temperature exceeds 100° F.
CELOTEX CEMESTO Pages 33, 34, 35	4 x 4, 4 x 6, 4 x 8, 4 x 10, 4 x 12	Thicknesses of Celotex: ½", 1", 1½", 2". Asbestos-cement surfaces each 1/8" thick (S1S or S2S)	A completely fabricated, fire and moisture resistant insulating wall unit, comprised of Ferox-treated Celotex Cane Fiber Insulation Board surfaced either on one side or on both sides with cement-asbestos.	Integral finished interior and exterior wall or interior partition wall. Dry kilns, air-conditioned rooms, air ducts, factory partitions, etc.
THERMAX Pages 36 to 55	20" wide by 32", 48", 64"; 72", and 96" long. Special lengths up to 9 ft. on request.	1", 2" and 3"	Long, tough wood shreds completely coated with fire-resisting cement. Conductivity, 0.458 per inch.	Structural heat and sound insulation. Adapted to fireproof construction. Complete catalog available.
C-X ROCK WOOL	Batts, 15" x 23" Also furnished in granular and loose form in bags.	Batts. 3 5/8". (Wall thick)	Made from carefully selected natural rock, melted in a furnace and blown into hair-like fibers by highpressure steam. Fibers chemically treated during manufacture to make water repellent. Has low conductivity and is incombustible, fireproof, vermin-proof, rodent-proof. Furnished in batt form for fitting between wood framing members; also granular for pouring into enclosed spaces and loose for packing into open spaces.	For insulation and fire-retarding purposes between studs, joists or rafters.

CELOTEX HARD BOARD PRODUCTS

CELOTEX HARD BOARD Page 25	4 x 2, 4 x 3, 4 x 4, 4 x 6, 4 x 8, 4 x 9, 4 x 10 and 4 x 12 ft.	1/8" & 3/16", all sizes. 1/10" in 6 ft. and 12 ft. lengths. 1/4" & 5/16" in 12 ft. lengths only.	A rigid, tough, grainless and moisture-resisting fibre board. One surface is smooth—the other has a canvas-like texture. May be painted or lacquered.	Generally used for outdoor signs (painted), truck bodies, furniture and counter tops.
CELOTEX TEMPERED HARD BOARD Page 25	4 x 2, 4 x 3, 4 x 4, 4 x 6, 4 x 8, 4 x 9, 4 x 10, and 4 x 12 ft.	1/8" & 3/16", all sizes. 1/10" in 6 ft. and 12 ft. lengths. 1/4" & 5/16" in 12 ft. lengths only.	Similar to Celotex Hard Board, except specially treated against moisture by a tempering process. One surface is smooth, the other has a canvas-like texture.	Recommended for concrete form work and other uses exposing the board to weather or moisture. Meets the accepted standards of density, strength and durability.
CELOTEX BLACK TEMPERED HARD BOARD Page 25	4 x 6, 4 x 12 ft.	1/10", 1/8", 3/16", 1/4" and 5/16"	Similar to Celotex Tempered Hard Board—rigid, tough, grainless and waterproof. Has a smooth, mottled black finish on one side, and a light brown canvas-like texture on the other side.	Used for table tops, counter tops, shelving and other furniture specialties. Also used as a wall finish in combination with regular Celotex Tempered Hard Board.
CELOTEX HARD BOARD TILE, TEMPERED Page 25	4 x 12 ft.	1/8" and 3/16"	Celotex Hardboard Tile is a tough, tempered hard board with impressions stamped into a tile-like pattern of 4-inch squares. Readily takes enamel or lacquer.	Particularly adapted for wainscoting in restaurants, bathrooms, kitchens, taverns wherever a smooth tile-like finish is desired.
CELOTEX TEMPERED CONCRETE FORM BOARD Page 25	4 x 6, 4 x 12 ft.	3/16", 1/4", 5/16"	A rigid, tough, grainless tempered fiber board of unusual strength and durability. Easy to handle, nail and saw.	For concrete structural foundations and walls. Makes possible high grade smooth finish concrete exteriors and interiors.
CELOTEX PANEL BOARD Page 25	4 x 2, 4 x 3, 4 x 4, 4 x 6, 4 x 8, 4 x 9, 4 x 10 and 4 x 12 ft.	1/4"	A fiber board of superior strength, stiffness and moisture-resistance. One surface is smooth and polished—the other has a canvas-like texture. Easily cut and worked because of its low density. Both surfaces are easy to decorate.	Generally used for paneling of home, store or office interiors without decorating. Suitable for use with or without paint or lacquer. Also used for drawer bottoms and dresser backs.
CELOTEX STUDIO BOARD Page 25	4 x 2, 4 x 3, 4 x 4, 4 x 6, 4 x 7, 4 x 8, 4 x 9, 4 x 10 and 4 x 12 ft.	1/4"	This is a lighter weight and tough grainless fiber board having one smooth surface of mottled light brown. The other surface has a burlap-like texture.	Generally used for panelling of home, store or office interiors without decorating. Suitable for use with or without paint or lacquer. Also used for drawer bottoms and dresser backs.

OTHER CELOTEX PRODUCTS

CELOTEX TEXBORD Pages 22, 23, 24, 25	Lengths—8 and 10 feet Widths, 6", 9" and 12"	1/4"	A genuine fine cabinet wood veneer firmly laminated to a Celotex Cane Fiber base. Each unit is an individual plank. Edges beveled. Furnished in walnut, mahogany, avodire.	Interior wall and ceiling finish.
CELOTEX MOULDINGS Page 17	According to design	According to design	Mouldings made from Celotex Cane Fiber Board; Friezes made from Celotex Panel Board.	Wall and ceiling decorative elements for interior cornices, panels, etc.
CELOTEX ORNAMENTS Page 18	12" x 12", 16" x 16" 22" round	1/2"	Made from Celotex Cane Fiber Board (See Figure 5 on Page 12).	Wall and ceiling decorative elements.
CELOTEX BATTEN STRIPS Page 18	According to design	1/2"	Made from Celotex Cane Fiber Board. Beveled is standard; beveled and grooved furnished on special order.	Wall and ceiling panels.
CELOTEX TRAFFIC BOARD Page 30	24 1/2" x 48 1/2"	1/4" & 1/2"	Ferox-treated Celotex cane fiber insulation board impregnated with selected bitumens by a special process. Unpainted. Square edges only.	Cushioning under wood block flooring; protection of waterproofing courses, and other general purposes.
CELOTEX PROMENADE TRAFFIC TOP Page 29	12" x 12", 12" x 24", 24" x 48"	1/4" & 1/2"	Ferox-treated Celotex cane fiber insulation board impregnated with selected bitumens by a special process. Colors: black, green and red; also, furnished unpainted. Edges beveled.	Promenade surface on roofs, play courts, aisleways or other surfaces subjected to foot traffic and exposed to the outside weather.
CELOTEX MIL-FLOR TRAFFIC TOP Page 29	24" x 48"	1/4" & 1/2"	Ferox-treated Celotex cane fiber insulation board impregnated with selected bitumens by a special process. This product has greater density and toughness and is less resilient than Promenade Traffic Top. Furnished primed ready to lay, unpainted and with beveled edges.	Exceptionally adapted for medium duty traffic surface for factory floors, but is not recommended where floors are subjected to excesses of oil or in heavy industry plants subjected to severe abuses from abrasion by heavy machinery parts or heavy factory trucks with narrow steel wheels.
FLEXCELL EXPANSION JOINT Page 32	4 x 12 boards, job-cut to fit concrete thickness.	1/4", 3/8", 1/2", 3/4", 1"	Made of Celotex Cane Fiber Board, impregnated by a patented process with a durable, protective asphalt.	For concrete expansion joints.

1. Celotex Vapor-seal Insulating Sheathing (Asphalt Coating Exposed)
2. Celotex Vapor-seal Insulating Sheathing (Aluminum Coating Exposed)
3. Celotex Insulating Building Board
4. Celotex Insulating Tile Board Ceiling
5. Celotex Insulating Finish Plank
6. Celotex Mouldings
7. Celotex Insulating Lath
8. Celotex Protection Course
9. Shingles
10. Wood Siding
11. Brick Veneer
12. Plaster
13. Wood Flooring
14. Wallpaper

TABLE NO. 1.—COLORS AND FINISHES

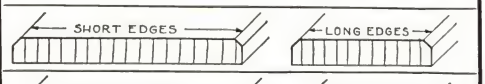
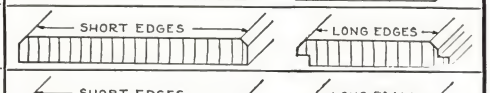
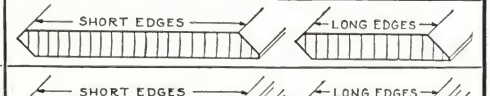
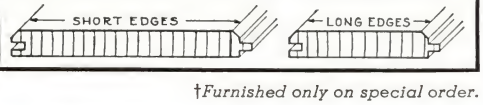
NO. OF FINISH	TOP FACE	REVERSE FACE
53	Natural Color, Sanded	Natural Color, Tapestry Texture
55	Natural Color, Rippled and Sanded	Natural Color, Tapestry Texture
60	Mottled Brown Color, Tapestry Texture	Natural Color, Sanded
75	Light Brown Color, Rippled and Sanded	Natural Color, Tapestry Texture
82	Ivory Color, Smooth Finish	Natural Color, Sanded

NOTE: *Celotex Building Board is Furnished in all colors except No. 60 on special request. Only one surface suitable for interior finish. Celotex Finish Plank is furnished in all Finishes. Celotex Tile Board is available in all but No. 60 Finish.*

MOULDINGS

Celotex mouldings (shown in color on page 17) are the ideal complement to walls and ceilings of Celotex. They are used for cornice decoration, batten strips to cover nail heads and joints, or to carry out the architectural design. Celotex ornaments for corner or center treatments or for borders are shown in color on page 18.

TABLE NO. 2.—TYPES OF CELOTEX JOINTS—Tile Board and Plank

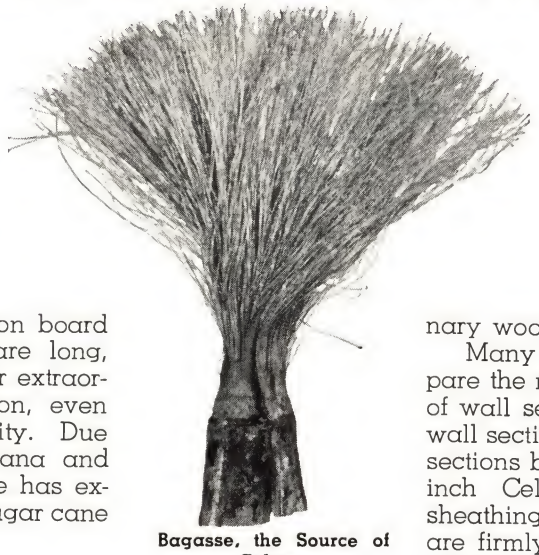
TYPE OF JOINT	DESCRIPTION	DETAIL
Double A*	All edges, both top face and reverse face, beveled, interlocking joint. All Tile and Plank with this joint are reversible so that sanded surfaces and textured surfaces may be alternated in pattern. Suitable in Tile for Square, Diamond, Ashlar and Basket Weave patterns. (For Herringbone specify one-half each left and right joints.)	
A†	All edges of one face beveled, butt joint. Suitable for all tile patterns.	
B†	All edges of one face beveled, long edge ship-lapped. Suitable for Square, Diamond and Ashlar patterns. (Not Basket Weave or Herringbone.)	
C†	Diagonal bevel joint, all edges of one face beveled. Suitable for Square, Diamond, Ashlar and Basket Weave patterns. (Not Herringbone.)	
D†	Tongue and groove joint, all edges of one face beveled. Suitable for Square, Diamond, Ashlar and Basket Weave patterns. (Not Herringbone).	

**Standard joint for Tile and Plank; furnished on ½-inch board only.*

†Furnished only on special order.

PROPERTIES OF CELOTEX

Celotex is a rigid, structural cane fiber insulation, made from bagasse—the tough vegetable fiber of sugar cane, after the sugar has been extracted. It combines insulating effectiveness with bracing and stiffening strength equal to or greater than that of wood sheathing. The fiber, practically limitless in supply, is the ideal basic material for insulation board in that the individual fibers are long, tough, strong, and resilient. Their extraordinary resistance to deterioration, even when untreated, insures durability. Due to climatic conditions in Louisiana and processing methods, the bagasse has exceptional qualities not found in sugar cane fiber produced elsewhere.



Bagasse, the Source of Celotex

MANUFACTURING PROCESS—The cane fibers are first cooked and repeatedly washed. The cooking dissolves all sugar and other soluble matter and the washings remove it. The clean fibers are then chemically treated (waterproofed) so that the entire board throughout its thickness is highly water resistant.

Next the fibers are treated against dry rot and termites by the patented Ferox process (see page 8). While still wet they are then firmly felted, or interwoven, (without the addition of adhesives) and fabricated into continuous boards 12 feet wide and more than 1,000 feet long. The wet board passes through driers heated to 350° F. or more, which not only dry the board but result in a sterile product.

Celotex manufacture is under precise control at all times. The physical properties established for each product become production standards and are constantly maintained. Each of the different forms of Celotex has its own individual characteristics. Comparison with data relating to other materials should, therefore, be made only when the materials studied are intended for the same use and the tests have been made under similar laboratory conditions.

SIZES—Sizes and thicknesses of the various Celotex products including their major application uses are given in the tables on pages 4 and 5.

THERMAL CONDUCTIVITY—The insulating value of Celotex has been established by many nationally known laboratories (U. S. Bureau of Standards, Armour Institute of Technology, and others). Tests show the average thermal conductivity to be 0.33 B.t.u. per hr., per sq. ft., per deg. F., per in. thickness. This value applies to Celotex Building Board, Vapor-seal Insulating Sheathing, Lath, Finish Plank, Tile Board, and Roof Insulation. The thermal conductivity of Celotex Vaporproofed Low Temperature Insulation (VLTI) is 0.30 B.t.u. per hour, per sq. ft., per deg. F., per in. thickness.

STRUCTURAL STRENGTH—It is important to differentiate between the strength of a material itself, its tensile or compressive strength, and its strength when installed for some particular use. Lumber parallel to the grain, for example, has greater tensile strength than Celotex, but a Celotex-sheathed wall possesses bracing and stiffening properties far in excess of a wall sheathed with wood applied horizontally (see the table below). It equals and often exceeds the strength of ordinary wood sheathing applied diagonally.

Many tests have been made to compare the rigidity or resistance to distortion of wall sections sheathed with wood and wall sections sheathed with Celotex. Wall sections built of standard studding and ½ inch Celotex, or studding and wood sheathing, usually 8 feet by 12 feet in size, are firmly bolted on the lower edge and pulled on the upper edge to distort them.

The magnitude of the distortion at a pull of 1,600 pound is as follows:

Tests made by or at	Thrust, pounds	Distortion in inches	
		Celotex-sheathed partition	Wood-sheathed partition
R. W. Hunt Co.	1,600	0.04	5.54
Univ. of Minn.	1,600	0.31	4.10
Colum. Univ.	1,600	0.30	5.02

It will be seen that under a pull of 1,600 pounds, which is near the maximum for wood sheathing, the Celotex wall sections distorted less than one-tenth as much as the wood-sheathed walls.

Recent tests at Columbia University on Vapor-seal Insulating Sheathing (25/32 inch thick) show proportionately greater strength than the tests on ½ inch Celotex. These tests reveal that a wall sheathed with Vapor-seal is vastly superior from the structural standpoint to a wall sheathed with either horizontal or diagonal lumber.

COMPRESSIVE STRENGTH—There are two conditions of compressive strength involved in actual practice:

1. The per cent reduction in thickness under load.
2. The per cent reduction in thickness after removing load.

The following table shows the reduction in thickness of Celotex under various load intensities, and the "come-back" upon removing the load. The tests were made by Robert W. Hunt & Company.

Pressure lbs. per sq. in.	Percent reduction in thickness under load	Percent reduction in thickness after removing load
5	1.14	0.62
10	2.44	1.09
20	4.30	1.76
40	8.86	3.16
100	19.22	7.82

Features

TENSILE STRENGTH—The minimum tensile strength of Celotex Building Board, Celotex Lath or Celotex Vapor-seal Insulating Sheathing, based on The Celotex Corporation Product Specifications, is sufficient to meet all building construction requirements. Tests show that the average tensile strength is substantially higher.

PLASTER BONDING STRENGTH—Laboratory tests show that a direct perpendicular pull of 700 to 1,160 pounds per square foot is required to break plaster loose from Celotex. As the plaster load of a ceiling equals only about 5 pounds per square foot, the use of Celotex Lath as a plaster base provides a factor of safety of about 150. This is greatly in excess of the strength of bond of plaster to wood lath.

NAILING STRENGTH—When standard 1½ inch galvanized roofing nails are spaced 3 inches apart and ⅜ inch away from the edge (recommended Standard Practice) a Celotex joint will sustain a pull of 750 pounds per foot of joint before the board pulls away from the nail. This is based on ½ inch Celotex Building Board. Greater pulls would be sustained by greater thicknesses of Celotex.

MOISTURE RESISTANCE—All Celotex cane fiber products are thoroughly waterproofed during manufacture by means of a chemical treatment. It should be understood, however that Celotex is not recommended where it will come in direct contact with a hydrostatic head without the additional protection of a bituminous waterproofing course, consisting of alternate layers of saturated roofing felt and asphalt or pitch.

EXPANSION AND CONTRACTION—The linear expansion and contraction of Celotex cane fiber products due to temperature changes is practically nil. The linear expansion of Celotex as the result of moisture changes is only 15/100 of one per cent for a change from 35 per cent to 70 per cent in the relative humidity.

FEROX PROCESS—The Ferox process (patented), used in the manufacture of all Celotex cane fiber products, is a method whereby the individual fibers, in their wet state and before formation into a board, are coated with a chemical complex which is toxic to fungi, termites and other cellulose destroying organisms. This chemical complex in no way alters the physical properties or utility of the finished products. The Ferox-processed Celotex product presents no hazards to humans or domestic animals.

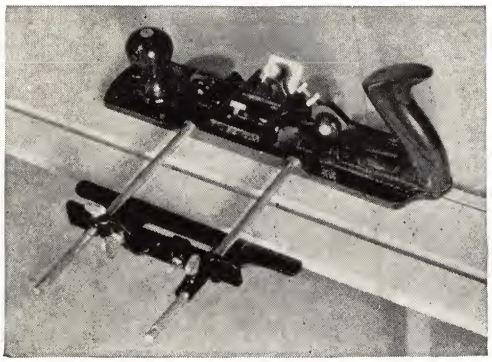
TERMITES—The Ferox process was originally developed for Celotex cane fiber products sold in tropical countries where it was found necessary to have Celotex products positively protected against termite attack, even when in storage or transit. Laboratory tests on the resistance of Ferox treated products to termites have been amplified by hundreds of field tests under actual working conditions in the tropics with completely satisfactory results. There have been instances where the untreated crating lumber of the Ferox shipment was devoured by termites while no evidence of the attack on the Celotex product itself was observed. Since the latter part of 1931, all Celotex cane fiber products have been made under the Ferox process.

DRY ROT—Ferox-processed Celotex is highly resistant to the attack of dry rot fungi. These fungi require warmth and moisture for their development. Those parts of buildings, therefore, where moisture collects and cannot readily evaporate are particularly subject to decay—roof sheathing, roof insulation, and in textile mills and other buildings in which high humidities exist. The great advantages of a material for these and similar uses that resists both termites and dry rot are obvious.

RODENT AND VERMIN RESISTANCE—Celotex contains no food for squirrels, rats, mice or other rodents or vermin. Rodents will only attack it when food or water on the opposite side attracts them, in which case they may gnaw a hole through Celotex as they would through plaster, wood or even concrete. When this occurs it will be noted that the fibers are left lying at the hole and are not eaten.

FIRE RETARDANT—The proper use of Celotex products in wood frame buildings adds to their fire safety. Celotex does not flame readily like wood, because it contains no pitch or resins. Its heat insulating value retards the spread of fire and tends to confine fire to the space in which it originates. It is used normally in large sheets and thus presents few cracks or open joints through which flame can pass and ignite the edges of the material or to reach more combustible material beyond. Celotex weighs only a third to a quarter as much as wood and generates correspondingly less heat.

DURABILITY — The life-of-the-building permanency which Celotex cane products possess is the product of four factors: (1) the natural decay resistance of cellulose fiber; (2) elimination of dry rot and other fungus attacks by the Ferox process; (3) freedom from destruction by Termites which starve when the organisms destroyed by the Ferox process are not present in their food, and (4) the water-repellency of the treated fibers. The two chemical treatments to which Celotex cane fibers are subjected during manufacture have greatly extended their natural longevity and have made practicable the Celotex guarantee for the life-of-the-building.



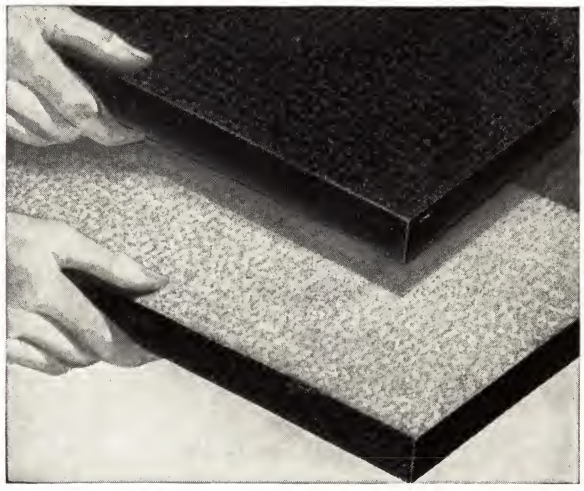
The Stanley Grooving Plane

WORKABILITY—Celotex is easily cut, carved, grooved and otherwise worked with ordinary woodworking tools with keen cutting edges. Special cutting knives and grooving planes have been developed by the Stanley Company and other tool makers for beveling, grooving and cutting Celotex to leave clean, smooth surfaces. Celotex may be sanded, stained, painted, lacquered, nailed and glued or cemented, making it one of the most facile materials used in building construction.

SUPPLEMENTARY INFORMATION

CELOTEX VAPOR-SEAL INSULATING SHEATHING

Celotex Vapor-seal Insulating Sheathing is designed to be used as a wall sheathing in frame construction in combination with various types of exterior finish such as brick veneer, wood siding, wood shingles or stucco, and should be applied in accordance with Specification No. 1. Building paper is not required where Vapor-seal Insulating Sheathing is used on walls. This product is also recommended as roof boarding on pitched roofs in combination with wood stripping or solid wood sheathing, and for this purpose should be applied in accordance with Specification No. 2.



VAPOR-SEAL INSULATING SHEATING
All Edges and Sides Coated With Asphalt
One Side Finished With Aluminum Powder Over Asphalt

Celotex Vapor-seal Insulating Sheathing not only is integrally waterproofed and treated against dry rot by the patented Ferox process, but the board is given an additional vaporproofing surface treatment—both sides and all edges are thoroughly sealed by means of a coating of asphalt. One surface of the board is also finished with an aluminum compound. See details on Page 11 for recommended uses of Vapor-seal.

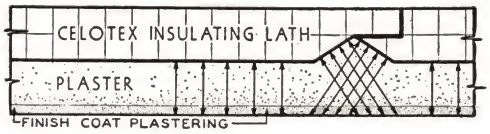
The Celotex used for this product, even before the application of the asphalt coating, is of pronounced rigidity. After application of the coating of asphalt to all sides and edges, the rigidity of the finished board is materially increased.

Celotex Vapor-seal Insulating Sheathing provides greater bracing strength than conventional lumber construction, and is impervious to air leakage under all conditions for which it is recommended in building construction.

CELOTEX INSULATING LATH

Celotex Insulating Lath is a patented insulating plaster base. The beveled edges and ship-lapped joints provide greater plaster reinforcement at the lath joints where most needed (See illustration). The continuous unbroken surface eliminates lath marks and minimizes plaster cracking.

Plaster adheres permanently to Celotex Insulating Lath due to the combined mechanical and suction bond. The plaster bonding strength of Celotex Insulating Lath is approximately 150 times the actual requirement. The lath may be bent to fit rounded corners, thereby insulating every inch of wall and ceiling area. Plaster at no time impairs the insulation value of Celotex.



The application of Celotex Insulating Lath is covered by Specification No. 4.

INTERIOR FINISH PRODUCTS

Celotex is preferred for interior decoration because it is a versatile material. The natural color of Celotex, a neutral gray-tan or subdued tone, is an ideal background in most instances. To meet specific conditions it may be readily and economically painted and decorated. In addition, Celotex is furnished in several well chosen tints to simplify the task of the interior decorator.

The product meets all requirements of unit size. Celotex Building Board, ½-inch and 1-inch thick, 4 feet wide and 4 to 12 feet long, is well suited to modern wall and ceiling treatment. By means of beveling and grooving, or through the use of mouldings of Celotex or other materials, areas of desired proportions can be easily produced. Celotex Tile Board—small square and rectangular units of convenient sizes—are used to create innumerable conventional patterns. Celotex Finish Plank—long narrow units—strikes a new note in modern wall treatment. Celotex ornaments and friezes will add a final touch of beauty to any type of Celotex interior.

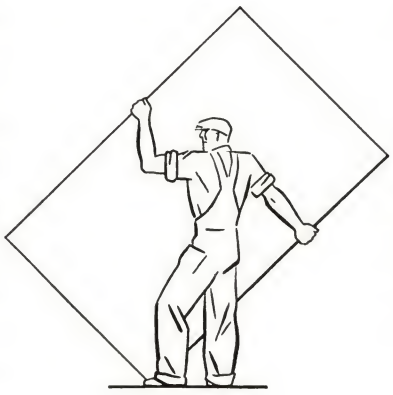
The application of these interior finish products is covered by Specifications Nos. 6, 7, and 8. Where Celotex is to be decorated with plastic paints or by staining, painting or papering, Specification No. 5 and data on page 21 should be followed. For further information on these subjects, send to The Celotex Corporation for descriptive literature.

CELOTEX TEXBORD—Wood panelling in fine cabinet woods has always been regarded as one of the most attractive wall decorations. Celotex Texbord consists of a ¼-inch Celotex base finished with a genuine fine cabinet wood veneer. Each unit is an individual plank having a different grain from that of any other plank. Edges of the boards are so beveled that when completed the installation appears to be thick solid boards.

Texbord has made available for the first time a genuine wood veneer surface which can be installed at a low cost. This product is prefinished and is available in walnut, mahogany and avodire. Methods of application are given in Specification No. 9.

METHODS OF APPLYING CELOTEX

The methods of application here outlined are the result of years of experience in testing and installing Celotex products and the performance of these products under a wide range of conditions. The master specifications indicate the Celotex product or products best adapted for each purpose and, where necessary, limit the use to conditions for which long life and satisfactory performance can be assured.



When installed according to these standards of good practice, *Celotex Building Board, *Vapor-seal Insulating Sheathing, Insulating Lath, Plank and Tile Board carry the Life-of-the-Building Guarantee, backed by the entire resources of The Celotex Corporation.

**Except as exterior finish*

SPECIFICATION No. 1 — WALL SHEATHING

CELOTEX VAPOR-SEAL SHEATHING OR CELOTEX BUILDING BOARD

NOTE: *See Specification No. 2 for roof sheathing for pitched roofs.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

All framing shall be 12 inches or 16 inches on center.

(2) MATERIAL

Sheathing shall be **[Celotex Vapor-seal Insulating Sheathing 25/32 inch thick] [Celotex Building Board [½] [1] inch thick],** 4 feet wide by length best adapted.

NOTE: *Vapor-seal Insulating Sheathing is preferable for most cases. See description on page 9.*

The following wall areas shall be covered:

NOTE: *Here list and locate. If more than one kind or thickness is used, list separately and the respective areas covered.*

Vapor-seal Insulating Sheathing

(3) APPLICATION

(3a) GENERAL—Insulation continuity shall be maintained. Apply Celotex with the length parallel with framing members. Boards shall be of sufficient length to completely span between sills and plates or other structural nailing members. Where intermediate end joints are necessary, provide 2x4 inch nailing headers cut in between framing members. All joints shall center over framing.

(3a1) Vapor-seal Insulating Sheathing shall be erected with the aluminum side next to the framing members.

(3a2) When using Celotex Building Board as sheathing in dry weather, moisten Building Board by sprinkling lightly with hose or sprinkling can or with a broom dipped into a pail of water, and pile one day before application. Remove boards from the pile just prior to nailing to the frame.

(3b) SPACING—Space boards ⅛ inch apart at all edges. At window and door frames bring Celotex in close contact with frame members.

NOTE: *Celotex boards are 1/8 inch less than full theoretical dimensions to allow for spacing as above on standard framing members.*

(3c) NAILS—

(3c1) Use 2 inch galvanized nails with ⅜ or ½ inch heads for Vapor-seal Sheathing.

(3c2) Use 1½ inch galvanized nails with ⅜ inch heads for ½ inch thick Building Board.

(3c3) Use 2 inch galvanized nails with ⅜ or ½ inch heads or 8d common nails for 1 inch thick Building Board.

(3d) NAILING—First nail Celotex to intermediate framing members and then nail the edges. On intermediate framing members, space nails

6 inches apart. At all edges space nails 3 inches apart and ⅜ inch in from the edge. Drive nails until the heads are slightly below the Celotex surface.

NOTE: *The surface of Vapor-seal Insulating Sheathing is indented to show proper location of nails.*

(4) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions when and where they apply.*

NOTE: *Celotex is not a nailing base.*

(4a) CONSTRUCTION—Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce for all wood framing. All inner stud spaces shall be securely blocked off at plates and sills to prevent free circulation of air through such places.

(4b) WOOD SIDING—All joints shall butt over the center of a stud. Nail through Celotex to each stud using nails of sufficient length to pass through the Celotex and penetrate the stud at least 1 inch.

(4c) MASONRY VENEER—Masonry veneer shall be laid in the usual manner allowing not less than ½ inch space between the face of the Celotex and the back of the veneer. Metal ties for masonry veneer shall be nailed through Celotex into the studs. Nails shall be of sufficient length to pass through the Celotex and penetrate the framing studs at least 1 inch.

(4d) EXTERIOR STUCCO—

(4d1) Flashing—Flash over the head casings of all windows and doors with metal or prepared roofing.

(4d2) Waterproof Building Paper—Cover all Celotex surfaces beneath exterior stucco with a continuous layer of asphalt coated waterproof paper.

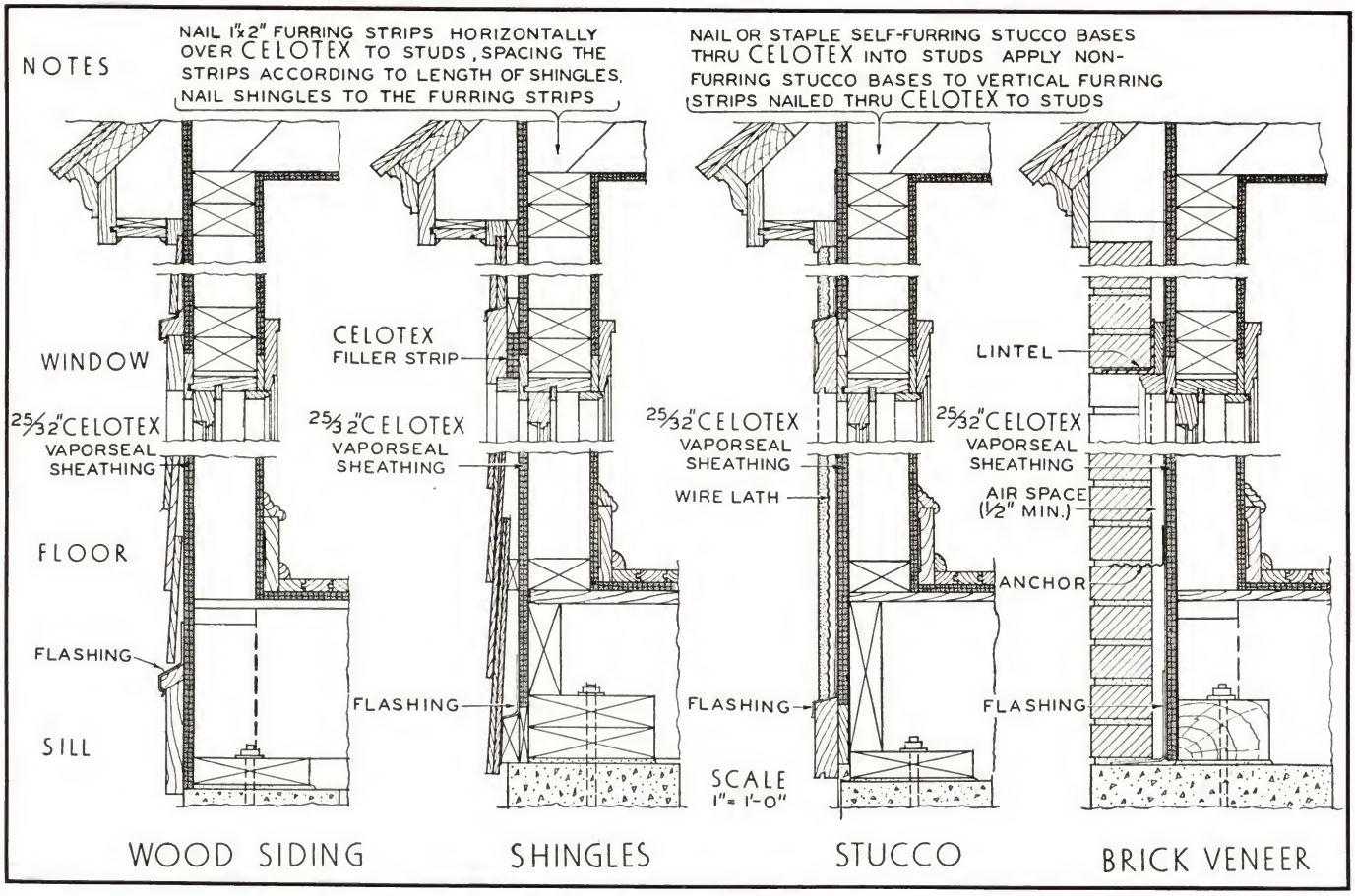
(4d3) Self-Furring Stucco Bases—Self-furring stucco bases, such as beveled wood lath and various forms of self-furring wire and expanded metal lath, shall be applied directly over Celotex and paper, nailing or stapling through the Celotex into the studs with standard penetration into the wood.

(4d4) Non-Furring Stucco Base—(a) Provide 1 x 2 inch wood furring strips nailed vertically to each stud over Celotex and paper to form furring for metal lath stucco base. Nails shall be of sufficient length to pass through the Celotex and penetrate the framing members at least 1 inch.

(b) Metal furring, round steel rods, or galvanized crimped band iron shall be stapled or nailed through the Celotex into the studs with standard penetration into the wood. Metal lath stucco base shall be wired to the furring.

(4e) FURRING STRIPS FOR SHINGLES, ETC.—Provide 1 x 2 inch wood furring strips laid at right angles to framing members, over the Celotex, properly spaced to take shingle weather exposure. Nails shall be of sufficient length to pass through the Celotex and penetrate the framing members at least 1 inch.

APPLICATION OF CELOTEX
AS WALL SHEATHING



SPECIFICATION No. 2 — INSULATING PITCHED ROOFS

CELOTEX BUILDING BOARD, ROOF INSULATION OR VAPOR-SEAL INSULATING SHEATHING

NOTE: *Where insulation is to be covered with built-up roofing, apply Celotex Roof Insulation in accordance with Specification No. 10.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

Rafters shall be spaced 12 inches or 16 inches on centers. Insert 2-inch x 4-inch headers between framing members at the end of all Celotex boards to serve as a nailing base.

(2) MATERIALS

Roof Insulation shall be Celotex **[Roof Insulation] [½] [1] [1½] [2] inch or greater thickness in multiples of ½ inch, size 22 inches x 47 inches]; [[½] [1] inch Celotex Building Board]; [25/32 inch Vapor-seal Insulating Sheathing].**

NOTE: *Where Celotex is applied directly over roof rafters, specify either Celotex Building Board or Celotex Vapor-seal Insulating Sheathing. Building board is available in thicknesses of 1/2 inch or 1 inch. Vapor-seal Insulating Sheathing is 25/32 inch thick. Both are furnished in 4-foot widths and in various lengths. If more than 1 inch insulation is required, additional thickness may be applied to under side of roof rafters. Where Celotex is to be applied directly over wood sheathing, specify Celotex Roof Insulation, 22 inches x 47 inches with square edges or with offset edges in 1 inch or greater thickness.*

(3) APPLICATION

(3a) CELOTEX APPLIED DIRECTLY OVER ROOF RAFTERS—Nail Celotex **[Building Board] [Vapor-seal Insulating Sheathing]** directly to the top of roof rafters. Apply the boards with the length parallel with the rafters with ample bearing for nailing along all edges. Nail to intermediate framing members first, spacing nails 6 inches apart and then nail along the edges, spacing nails 3 inches apart and ⅜ inch in from the edge. Drive nails until the heads are slightly below the surface. Leave ⅛ inch space between adjoining boards at sides and ends. Celotex is cut scant in width and length to allow for this space. Never force Celotex into place. Use **[standard ⅜ inch head, 1½ inch galvanized roofing nails for ½ inch Building Board] [2 inch galvanized nails with ⅜ or ½ inch heads or 8d common nails for 1 inch Building Board] [⅜ or ½ inch head, 2 inch galvanized nails for Vapor-seal Insulating Sheathing].**

(3a1) In dry weather, moisten Celotex Building Board the day before application by sprinkling lightly with a broom dipped into a pail of water, and pile. Remove boards from the pile just prior to nailing to rafters.

(3a2) Wood Sheathing Over Celotex—

(a) Apply wood sheathing over Celotex, driving nails into roof rafters using nails of sufficient length to penetrate roof rafters at least 1 inch.

NOTE: *The above method is suitable for metal roofing, asphalt shingles, composition roofing, rigid asbestos shingles, slate or tile or standing or batten seam metal roofing.*

(b) Over the wood sheathing, apply a continuous course of **[specify brand and weight]** waterproof felt.

NOTE: *Include the above under slate, tile and rigid asbestos shingles.*

(c) Roofing shall be nailed to wood sheathing.

(3a3) 1 x 2-inch Wood Strips Over Celotex—

NOTE: *This method of application is suitable for wood shingles, rigid asbestos shingles, slate or tile.*

(a) Over the Celotex apply a continuous course of **[specify brand and weight]** waterproof felt.

NOTE: *Include the above where slate or tile roofing or rigid asbestos shingles are to be used.*

(b) Apply wood strips over Celotex or felt properly spaced to conform to roofing units. Strips shall be nailed firmly to rafters, using nails of sufficient length to penetrate rafters at least 1 inch.

(c) Provide a 1-inch thick solid wood base over Celotex under all metal work, such as gutter aprons, valleys, hips, ridges, saddles, etc., to which to attach the metal in accordance with standard practice.

(d) Nail roofing units directly to wood strips thus installed.

(3b) CELOTEX APPLIED OVER WOOD SHEATHING—All roof sheathing boards shall be properly nailed to roof rafters before insulation is applied. Nails shall be of sufficient length to pass through insulation and to penetrate firmly (at least ¾ inch) into roof deck. Use galvanized nails with ⅜ to ½ inch heads. Each Celotex board shall be secured in place by nailing along each edge, spacing nails 12 inches apart, and also staggered along longitudinal center line.

(3b1) 1 x 2-inch Wood Strips Over Celotex—

(a) Over the Celotex apply a continuous course of **[specify brand and weight]** waterproof felt.

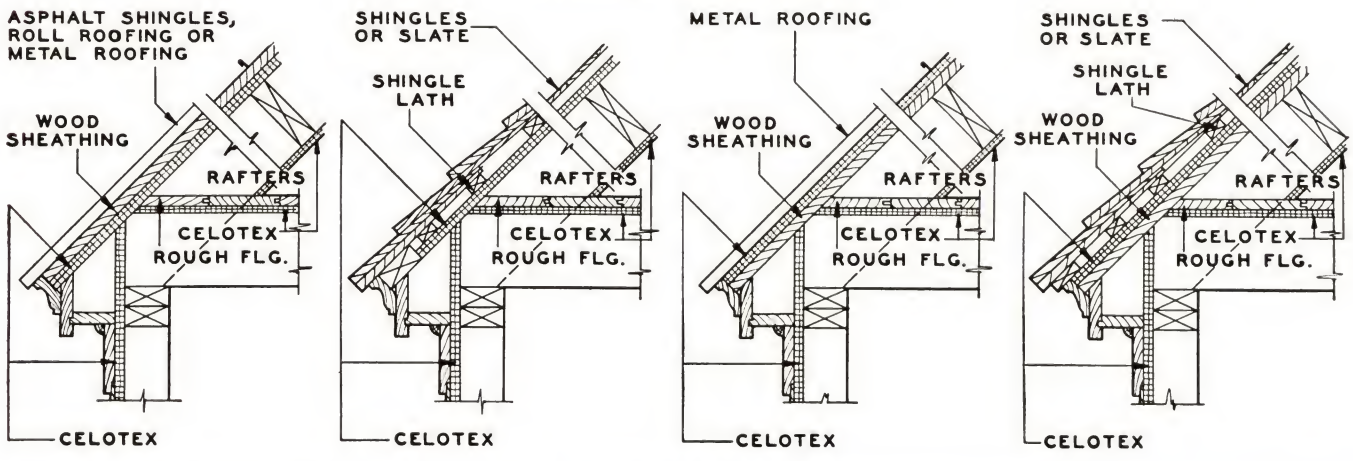
NOTE: *Include the above where slate or tile or rigid asbestos shingles are to be used.*

(b) Apply wood strips (shingle lath), properly spaced to conform to roofing units, over Celotex or felt. Nails shall be driven through Celotex firmly into underlying wood roof sheathing.

NOTE: *Include the above paragraph where wood shingles, rigid asbestos shingles, slate or tile are to be used.*

(c) Nail roofing units directly to wood strips thus installed.

Insulating Pitched Roofs



SPECIFICATION No. 3 — EXTERIOR WALL FINISH

CELOTEX VAPOR-SEAL SHEATHING OR CELOTEX BUILDING BOARD

(1) FRAMING

All framing shall be 12 inches or 16 inches on center.

(2) MATERIAL

Exterior finish shall be **[Celotex Vapor-seal Insulating Sheathing 25/32 inch thick] [Celotex Building Board [½] [1] inch thick]** 4 feet wide by length best adapted.

NOTE: *Here list and locate. If more than one thickness is used, list separately and the respective areas covered.*

(3) APPLICATION

(3a) MOISTENING CELOTEX BUILDING BOARD—Moisten and pile boards one day before application. Moisten by sprinkling lightly with a hose or sprinkling can or from a broom dipped into a pail of water. Remove boards from the pile just prior to nailing to the framing.

(3b) GENERAL—Insulation continuity shall be maintained. Apply Celotex with the length parallel with framing members. Boards shall be of sufficient length to completely span between sills and plates or other structural nailing members. Where intermediate end joints are necessary, provide 2 x 4-inch nailing headers, cut in between framing members. All joints shall center over framing.

(3c) SPACING—Space boards ⅛ inch apart at all edges. At window and door frames bring Celotex in close contact with frame members.

NOTE: *Celotex boards are ⅛ inch less than full theoretical dimensions to allow for spacing as above on standard framing 16 inches on centers.*

(3d) NAILS—

(3d1) Use 2-inch galvanized nails with ⅜ or ½-inch heads for Vapor-seal Insulating Sheathing.

(3d2) Use 1½-inch galvanized roofing nails with ⅜-inch heads for ½-inch thick Building Board.

(3d3) Use 2-inch galvanized nails with ⅜ or ½-inch heads or 8d common nails for 1-inch thick Building Board.

(3e) NAILING—First nail Celotex to intermediate framing members and then nail the edges. On intermediate framing members, space nails 6 inches apart. At all edges space nails 3 inches apart and ⅜ inch in from the edge. Drive nails until the heads are slightly below the Celotex surface.

(3f) PAINTING EXPOSED EXTERIOR FINISH—After proper sizing, the surface of Celotex Building Board should be given two coats of a good lead and oil paint. If Vapor-seal Sheathing is specified, use aluminum or other paint suitable for use over asphalt. Painting should be done before battens or wood trim are applied over joints.

(3g) BATTENS AND WOOD TRIM—Apply battens and wood trim **[as detailed]** over Celotex with nails of sufficient length to pass through the Celotex and penetrate the framing members at least 1 inch.

Horizontal Wood Strips Over Vapor-Seal Insulating Sheathing

SPECIFICATION No. 4 — PLASTER BASE

CELOTEX INSULATING LATH

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

All framing shall be 12 inches or 16 inches on center.

(2) MATERIAL

Plaster base shall be Celotex Lath. Lath units shall be **[½] [¾] [1]** inch thick, 18 inches wide x 48 inches long, with beveled edges and long edges shiplapped, delivered to the building site in the original manufacturer's packages.

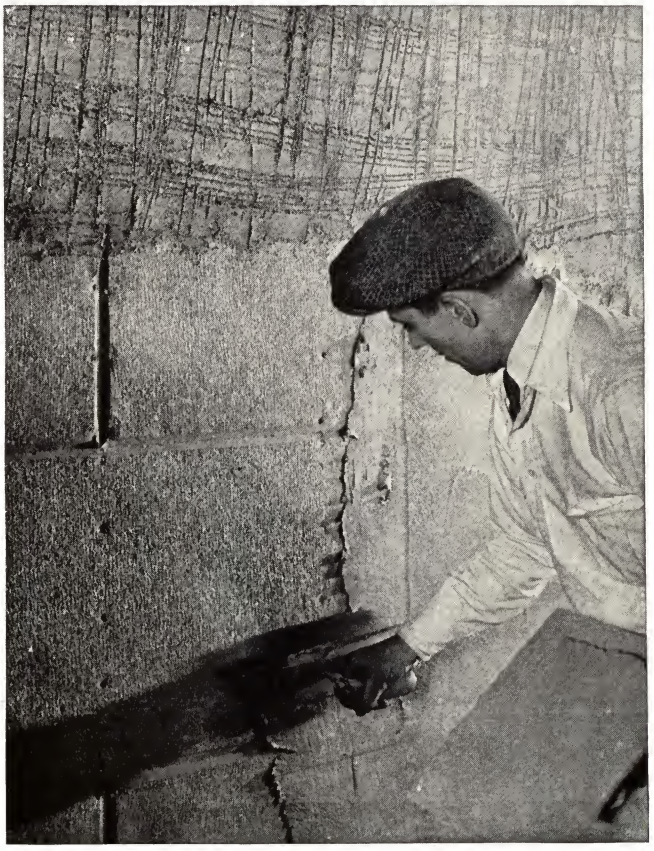
The following **[wall] [and] [ceiling]** areas shall be covered:

NOTE: *Here list and locate. If more than one thickness is used, list separately and the respective areas covered.*

(3) APPLICATION

(3a) GENERAL—Do not moisten lath units before application.

Apply lath with beveled edges and branded side out with the length at right angles to the framing **[or furring]** members. End joints shall be staggered and centered over framing members.



Celotex Lath Provides a Continuous Plastering Surface

Where piecing out is necessary, use only strips of Celotex. Accurately cut and fit lath around all electric outlet boxes, piping, etc.

(3b) SPACING—Bring edges together in moderate contact.

(3c) NAILS—

(3c1) Use 1⅛-inch long, special blued plasterboard nails with $\frac{5}{16}$-inch heads for ½-inch thick Celotex Lath.

(3c2) Use 1¾-inch special blued plasterboard nails with $\frac{5}{16}$-inch heads for ¾-inch and 1-inch thick Celotex Lath.

(3d) NAILING—Nail lath units securely to each framing **[or furring]** member with 5 nails spaced uniformly approximately 3 inches apart (20 nails to each unit).

Where units are applied to form curved surfaces, first nail at center of intermediate supports and spring to the contour of the framing.

(3e) ANGLE REINFORCEMENT—All corners shall be reinforced with standard metal corner beads. All re-entrant angles shall be reinforced with standard expanded metal angle lath strips. Reinforcement shall be securely stapled over Celotex Lath. Use 6-inch strips of expanded metal lath at juncture of frame and masonry constructions.

(4) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions when and where they apply.*

(4a) CONSTRUCTION—Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce for all wood framing.

(4b) FURRING—Fur all exterior masonry walls to receive Celotex Lath with **[1x2 inch] [specify]** furring strips set 12 inches or 16 inches on centers accurately shimmed to a true, level plane. Secure substantially to masonry.

(4c) GROUNDS—Furnish and erect, substantially secured to framing members through the Celotex Lath, full ½-inch wood grounds for all interior wood trim.

Where ¾-inch and 1-inch thick Celotex Lath units are used, add the necessary trim grounds on all door and window frames to compensate for this thickness plus full ½-inch of plaster.

(4d) ELECTRIC OUTLETS—Where ¾ and 1-inch thick Celotex Lath units are used, set electric outlet boxes to accommodate a full 1¼ and 1½-inch thickness from face of stud or joist to face of plaster.

(5) PLASTERING

(5a) CAUTION—Do not wet Celotex Lath before applying plaster.

(5b) INSPECTION—Inspect nailing and notify lather of any portions of Celotex Lathing not adequately secured in accordance with the manufacturer's specifications. See that all corners and angles are reinforced with metal corner beads accurately set to line with grounds and that all re-entrant angles are reinforced with expanded metal angle strips.

(5c) PLASTER—Use standard gypsum cement plaster or gypsum wood fiber plaster for scratch and brown coats mixed accurately in accordance with the manufacturer's specifications. Both scratch and brown coats shall be mixed to a wet consistency to allow for application with light trowel pressure and to facilitate darbying. Use any standard plaster finish over the brown coat, such as gypsum, lime, or lime gauged with gypsum, mixed in accordance with the manufacturer's specifications.

NOTE: *Lime plaster, lime gauged with gypsum, or gypsum plaster containing more than ten per cent of lime should not be used for scratch or brown coats.*

(5d) APPLICATION—Apply in three (3) coats to full ½-inch grounds in accordance with the plaster manufacturer's specifications. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary, and particularly on ceilings, provide plaster screeds to insure an even, uniform ½-inch plaster thickness.

In applying the scratch coat of plaster, it shall be carefully pressed into all beveled edges and joints to provide plaster reinforcement at these vital points.

If the brown coat becomes stiff and sets during darbying, wet down the surface to allow for darbying without undue pressure against the plaster surface.

Darby strokes shall be in the direction of framing members with the darby spanning two studs or joists.

(5e) VENTILATION—Provide adequate ventilation for the proper drying of the plaster.

NOTE: *Due to the moistureproof characteristics of Celotex Lath, all plaster moisture must be carried off by the air in contact with the exposed plaster surface.*

(5f) HEAT—Provide adequate heat to prevent injury to fresh plaster by frost.

SPECIFICATION No. 5

CELOTEX BUILDING BOARD AS A BASE FOR PLASTIC PAINTS AND WALL COVERINGS

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

All framing shall be 12 inches or 16 inches on center.

(2) MATERIAL

Wall base shall be Celotex Building Board. Boards shall be **[½] [1]** inch thick, 4 feet wide by length best adapted.

NOTE: *Here list and locate. If more than one thickness is used, list separately and the respective areas covered.*

(3) APPLICATION

(3a) SEASONING—The Celotex boards shall be placed singly around the room and allowed to stand at least 24 hours before erection to allow adjustment to atmospheric conditions. In exceptionally dry weather moisten the Celotex lightly and pile the boards 24 hours before erection.

(3b) GENERAL—Celotex shall be applied immediately prior to the erection of interior wood trim. Apply Celotex with the length parallel with framing members. Boards shall be of sufficient length to completely span between sills and plates or other structural nailing members. Where intermediate end joints are necessary, provide 2 x 4-inch nailing headers cut in between framing members. All joints shall center over framing members.

(3c) SPACING—Space boards ⅛ inch apart at all edges. At window and door frames bring Celotex in close contact with frame.

NOTE: *Celotex boards are ⅛ inch less than full theoretical dimensions to allow for spacing as above on standard framing.*

(3d) NAILS—Galvanized shingle, roofing or box nails.

(3d1) Use 1½ inch for ½-inch thick Celotex.

(3d2) Use 1¾ inch for ¾ and 1-inch thick Celotex.

Celotex Joint Stripped with Galvanized Annealed Wire Mesh, Bonded with Bonding Cement

Wall Finished with Leather Applied Over Celotex Building Board

(3e) NAILING—First nail Celotex to intermediate framing members and then nail the edges. On intermediate framing members, space nails 6 inches apart. At all edges space nails 3 inches apart and ⅜ inch in from the edge. Drive nails until the heads are slightly below the Celotex surface.

(3f) COVERING JOINTS—With coarse sandpaper rub down a recessed area from 4 to 6 inches wide at joints. Strip joints with galvanized annealed wire mesh, 12 or 16 to the inch, bonding the screening to the Celotex with bonding cement such as Swedish putty. The wire mesh, obtainable from The Celotex Corporation should not be nailed in place except when starting a joint and occasionally on ceiling strips to hold in place while applying cement. Hold one end of strip while the cement is applied to the surface of the wire and pressed through the mesh with a 4-inch painter's scraping knife. Spread the cement beyond the edges of the screen for not less than 1 inch so that the edge of the wire cloth will not show through the plastic paint finish. In bonding the wire over the joints, press firmly against the Celotex and fill mesh with cement applied in the consistency of putty. Apply, similarly, a strip of wire cloth bent around all corners and re-entrant angles.

(4) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions when and where they apply.*

(4a) CONSTRUCTION—Follow standard recommendations of Building Code Committee of U. S. Department of Commerce for all wood framing.

(4b) FURRING—Fur masonry walls with **[1 x 2 inch] [specify]** furring strips set 12 inches or 16 inches on center accurately shimmed to a true, level plane. Secure substantially to masonry.

(4c) ELECTRIC OUTLETS—Set electric outlet boxes to finish flush with the face of the Celotex Building Board.

(4d) APPLICATION OF PLASTIC PAINT AND WALL COVERINGS

NOTE: *See page 21, "Decoration of Celotex."*

SPECIFICATION No. 6 — INTERIOR FINISH

CELOTEX BUILDING BOARD

NOTE: *For application of other Celotex Interior Finish Products, see Specifications Nos. 7 and 8. Where more than one Celotex Interior Finish Product is being used, the application of all such products may be covered in one consolidated specification. For best results, detailed elevations of walls and plans of ceilings showing disposition, size, and thickness of units, including ornamental tile and mouldings, should be included and referred to in the specification.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

(1a) Studs and joists shall be framed to conform accurately to the design of board spacing or paneling, set 12 or 16 inches on center. Use additional studs, joists, and headers where necessary. Provide headers back of all wainscot caps, chair rails, baseboards, and other heavy wood trim.

(1b) Framing to receive Celotex used as interior finish shall be straight and shall provide a true, even nailing base.

(1c) Provide **[1 x 2 inch] [specify]** furring strips set according to the design and on 12 or 16-inch centers, accurately shimmed to a true level plane. Secure substantially to solid masonry or wood base.

(2) MATERIAL

Interior finish shall be Celotex Building Board. Boards shall be **[½] [1]** inch thick, 4 feet wide by length best adapted.

The following **[wall] [and] [ceiling]** areas shall be covered:

NOTE: *Here list and locate. If more than one thickness is used, list separately and the respective areas covered.*

NOTE: *See Table 1, page 6 for available finishes.*

(3) CUTTING AND FITTING

NOTE: *Celotex may be treated with battens and mouldings covering the joints or with exposed V-joints and grooves.*

(3a) JOINTS TO BE COVERED—Cutting may be done with a fine tooth saw, using a sharp blade, with rapid strokes and a minimum of pressure. Mouldings shall be **[wood] [metal] [Celotex] [specify width and thickness].**

NOTE: *Celotex mouldings are available in a variety of attractive designs which add greatly to the beauty of Celotex interiors.*

(3b) V-JOINTS AND V-GROOVES—Cuts, bevels, and V-grooves shall be made with a special tool against a straight edge and shall be clean and true.

(4) APPLICATION

(4a) SEASONING—The Celotex boards shall be placed singly around the room and allowed to stand at least 24 hours before erection to allow adjustment to atmospheric conditions. In exceptionally dry weather, moisten the Celotex lightly and pile the boards 24 hours before erection.

(4b) GENERAL—Celotex shall be applied immediately prior to the erection of interior wood trim. Apply Celotex with the length parallel with framing members with the **[smooth face] [textured face]** exposed. All joints shall center over framing members.

(4c) SPACING (JOINTS TO BE COVERED)—Space boards ⅛ inch apart at edges.

(4d) SPACING (EXPOSED AND V-JOINTS)—Bring boards to a moderate contact. Do not force into place.

(4e) NAILS—

(4e1) For ½-inch thick Celotex, use standard 1½-inch long galvanized shingle nails or galvanized roofing nails where joints are covered with battens, mouldings, or wood trim. Use 1¼-inch long finishing nails or No. 16 brads where nailing is exposed.

(4e2) For 1-inch thick Celotex, use 2-inch galvanized shingle or box nails where joints are covered with battens, mouldings, or wood trim. Use 1¾-inch galvanized finishing nails or brads where nailing is exposed.

(4f) NAILING—First nail Celotex to intermediate framing members and then nail the edges. On intermediate framing members, space nails 6 inches apart. At all edges space nails 3 inches apart and approximately ⅜ inch in from the edge. Where nailing is exposed, drive finishing nails at an angle and set the heads flush with the Celotex surface (Use of a nail set is recommended to avoid hammer marks). Where nails are covered by battens, mouldings, or wood trim, drive nails until the heads are slightly below the Celotex surface.

(4g) MOULDINGS, BATTENS AND TRIM—Apply **[as detailed]** over Celotex with nails of sufficient length to pass through the Celotex and penetrate the framing members at least 1 inch.

Grill Room Walls and Ceiling Finished with Celotex Building Board and Grooved Overlays

Celotex Building Board Easily Sawed or Cut For Accurate and Close Fitting for Interior Finish

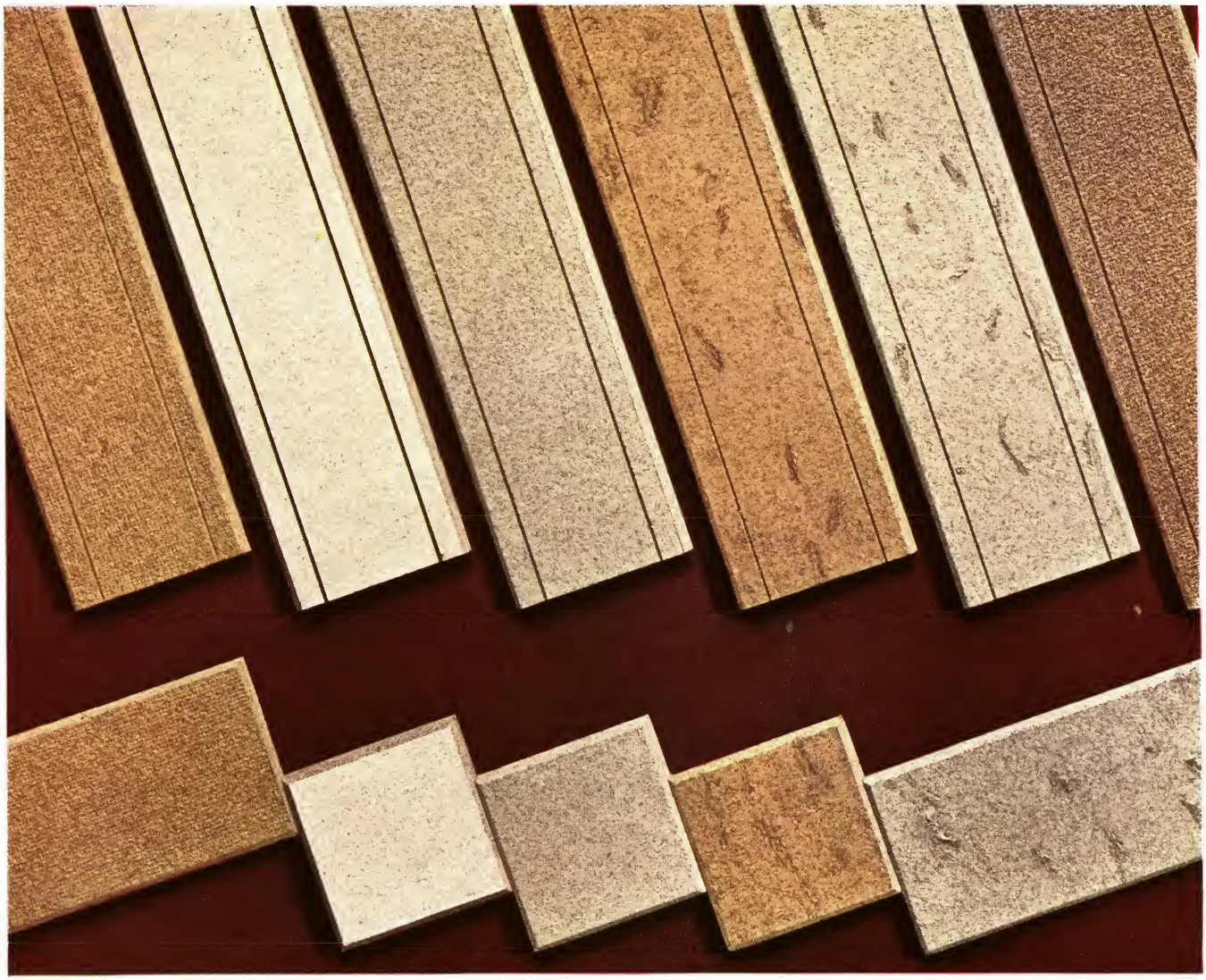
CELOTEX MOULDINGS

Shown in natural color are the standard types of Celotex Mouldings. Nos. 200 and 210 are made of Celotex Panel Board; all others have a Celotex Cane Fiber base. Special mouldings available at additional cost.

DIMENSIONS

Nos. 200 and 210—3½ in. wide, ¼ in. thick.
Nos. 150 and 151 (similar), 3 and 6 in. wide, ½ in. thick.
Nos. 101, 102, and 103—3, 6, and 9 in. wide, ½ in. thick.
No. 100—3½ in. wide, ½ in. thick.
No. 170—5 in. in diameter, ½ in. thick.
No. 130—1 in. by 1 in., flat diagonal.
Nos. 120 and 121—¾ x ¾ in. and 1¼ x 1¼ in. cove.
No. 111—1 in. wide, ½ in. maximum thickness.
No. 110—2 in. wide, ½ in. maximum thickness.
No. 105—2½ in. wide, ½ in. thickness.

At bottom left are shown the finishes on reverse sides of Celotex Building Board—tapestry (at left) and smooth sanded (at right).



A PHOTOGRAPH IN NATURAL FULL COLOR

CELOTEX INSULATING FINISH PLANK AND TILE—Left to right, Natural Color, Tapestry Texture; No. 82 Ivory Color, Smooth Finish; No. 53 Natural Color Sanded; No. 75 Light Brown Ripple and Sanded; No. 55 Natural Color, Ripple and Sanded; No. 60 Mottled Brown, Tapestry Texture (plank only). Plank ½ in. thick. Tile ½ and 1 in. thick. See table, page 4, for widths and lengths.

Below—**CELOTEX ORNAMENTS**—Desirable to add a final touch of beauty to ceilings. Square units are either 12 by 12 in. or 16 by 16 in. Circular unit is 22 in. in diameter. All ornaments ½ in. thick. Top row, left to right, C-32, C-33, M-1 (Circular), C-6, C-2. Bottom row, C-8, C-31, C-9, C-10.

A PHOTOGRAPH IN NATURAL FULL COLOR

SPECIFICATION No. 7 — INTERIOR FINISH

CELOTEX TILE BOARD

NOTE: *This specification may also be used for the application of Celotex Ornamental Tile. Celotex Mouldings and Ornaments shall be in sizes and designs as indicated on pages 17 and 18.*

NOTE: *For application of other Celotex Interior Finish Products, see Specifications Nos. 6 and 8. Where more than one Celotex Interior Finish Product is being used, the application may be covered in one consolidated specification. For best results, detailed elevations of walls and plans of ceilings showing disposition, size, and thickness of units, including ornamental tile and mouldings, should be included and referred to in the specifications.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) BASE

NOTE: *Select base best adapted to design and construction.*

(1a) SOLID WOOD BASE—Cover framing with 4, 6 or 8 inch wide, matched 25/32 inch-thick, lumber to form a continuous level nailing base.

(1b) PLYWOOD BASE—Cover framing with plywood (preferably ⅜ inch thick) to form a continuous level nailing base.

(1c) FURRING STRIPS—Provide **[1 x 3 inch] [1 x 4 inch] [2 x 2 inch] [2 x 4 inch]** furring strips to conform to the Tile design, 8, 12, or 16 inch on centers. Shim where necessary to a true plane. Strips spaced 8 inches on center are preferred for 16 x 16-inch tile.

(1d) FRAMING—Space framing to conform to the size of units used, but not to exceed 16 inches on center.

(1e) PLASTER BASE—Shall be tested level and solid.

(2) MATERIALS

(2a) Interior finish shall be Celotex Tile Board of size, type of joint, thickness, and finish as indicated on drawings.

NOTE: *Sizes and thicknesses of Celotex Tile Board are given on page 4. Types of joints and finishes are given in Tables 1 and 2 on page 6.*

(2b) Adhesive shall be Celotex **[Plastic Heavy Body] [Light Body]** Adhesive or approved equal.

NOTE: *Include above when adhesive is required. Celotex Plastic Heavy Body Adhesive is used for applying Celotex to rough or smooth surfaces with or without supplementary nailing. Celotex Alcohol Base Light Body Adhesive is used for applying Celotex to smooth surfaces with supplementary nailing.*

(2c) The following **[wall] [and] [ceiling]** areas shall be covered:

NOTE: *Here list and locate definitely the wall and ceiling areas to be covered. Size and thickness of units, type of joint, and finish should be included in the drawings and referred to here.*

(3) CUTTING AND FITTING

All cutting and fitting shall be done in a neat, workmanlike manner. Where joints are not exposed, cutting may be done with a fine tooth saw, using a sharp blade with rapid strokes and a minimum of pressure. Where joints are exposed, cut with a sharp linoleum knife or special tool against a straight edge.

(4) APPLICATION

NOTE: *Tile may be applied by cementing and nailing over plaster base or by nailing over wood or plaster.*

(4a) GENERAL—

(4a1) Celotex Tile Board **[and Celotex Mouldings and Ornaments]** shall be laid in exact accordance with the detail drawings.

(4a2) Celotex Tile Board with Type B Joint shall be applied with long edges at right angles to furring strips.

(4b) SPACING—Bring units to a moderate contact. Do not force into place.

(4c) ADHESIVE—For cementing and nailing Celotex Tile Board to plaster, use Celotex Adhesives or other approved adhesives.

(4d) NAILS—Galvanized finishing nails or No. 16 brads.

(4d1) Use 1¼ inch for ½-inch Celotex.

(4d2) Use 1½ inch for ¾-inch Celotex.

(4d3) Use 1¾ inch for 1-in. Celotex.

NOTE: *Zinc-coated nails are recommended where high humidities are prevalent.*

(4e) CEMENTING AND NAILING OVER PLASTER—

NOTE: *Advocated in better class of work but only where the plaster is sound.*

Apply spots of adhesive 3 or 4 inches in diameter to the back surface near each corner with additional spots approximately 8 to 10 inches apart on all edges of large tile. Exercise care to prevent adhesive from appearing on the exposed finished side. Slide the tile into position, level and true, and nail tiles in position with one or two nails at each corner and additional nails as required for large tile. Set heads neatly below the Celotex surface.

(4f) NAILING OVER WOOD BACKING (Continuous or Furring Strips)—Use one nail at each corner and additional nails 6 inches apart along edges and center line resting upon framing. Drive nails at an angle and set flush or just below the surface of Celotex.

Celotex Tile Board Ceiling

Tile Board Ceiling and Walls

SPECIFICATION No. 8 — INTERIOR FINISH

CELOTEX FINISH PLANK

NOTE: *For application of other Celotex Interior Finish Products, see Specifications Nos. 6 and 7. For the best results, accurate, detailed elevations of walls and plans of ceilings showing disposition, size, etc., including other interior finish products, should be included in the drawings and referred to in the specifications.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) BASE

NOTE: *Select base best adapted to design and construction.*

(1a) SOLID WOOD BASE—Cover framing with 4, 6, or 8-inch wide, matched lumber to form a continuous level nailing base.

(1b) PLYWOOD BASE—Cover framing with plywood (preferably ⅜ inch thick) to form a continuous nailing base.

(1c) FURRING STRIPS—Provide **[1 x 3 inch] [1 x 4 inch] [2 x 2 inch] [2 x 4 inch]** furring strips at right angles to Plank on 9-inch centers up to shoulder height and 12 or 16 inch on centers above this height. Shim where necessary to a true, level plane.

(1d) PLASTER BASE—Shall be tested level and solid.

(2) MATERIALS

(2a) Interior finish shall be Celotex Finish Plank of size, type of joint, thickness, and finish indicated on drawings.

NOTE: *See page 4 for dimensions, finishes, etc.*

(2b) Adhesive shall be Celotex **[Plastic Heavy Body] [Light Body]** Adhesive **[specify]** or approved equal.

NOTE: *Include above where adhesive is required. Celotex Plastic Heavy Body Adhesive is used for applying Celotex to rough or smooth surfaces, with or without supplementary nailing. Celotex Alcohol Base Light Body Adhesive is used for applying Celotex to smooth surfaces in conjunction with supplementary nailing.*

(2c) The following **[wall] [and] [ceiling] areas shall be covered.**

NOTE: *Here list and locate definitely the wall and ceiling areas to be covered. Refer here to drawings. See (2a).*

(3) CUTTING AND FITTING

All cutting and fitting shall be done in a neat, workmanlike manner. Where joints are not exposed, cutting may be done with a fine tooth saw, using a sharp blade with rapid strokes and a minimum of pressure. Where joints are exposed, cut with a sharp linoleum knife or special tool against a straight edge.

(4) APPLICATION

NOTE: *Plank may be applied by cementing and nailing over plaster base or by nailing over wood or plaster. (See paragraph (1a) above).*

(4a) SPACING—Bring units to a moderate contact. Do not force into place.

(4b) ADHESIVE—For cementing Celotex Finish Plank to plaster, use Celotex Adhesive or other approved adhesives.

(4c) NAILS—Galvanized finishing nails or No. 16 brads.

(4c1) Use 1¼-inch for ½-inch Celotex.

(4c2) Use 1½-inch for ¾-inch Celotex.

(4c3) Use 1¾-inch for 1-inch Celotex.

NOTE: *Zinc-coated nails are recommended where high humidities are prevalent.*

(4d) CEMENTING OVER PLASTER—

NOTE: *Advocated in better class of work.*

Apply the adhesive in ribbons 3 or 4 inches wide along the long edges with additional intermediate ribbons of adhesive along the centers of wider planks. Exercise care to prevent adhesive from appearing on the exposed finished side. Slide the plank into position, level and true, and nail plank in position with one or two nails at each corner and additional nails as required. Drive nails in beaded groove of Plank and set heads neatly below the Celotex surface.

NOTE: *Use the above method only where the plaster is sound.*

(4e3) NAILING OVER WOOD BACKING (Continuous or Furring Strips)—Space nails 6 inches apart wherever possible. Drive nails in beaded groove of Plank and set heads neatly below Celotex surface.

SPECIFICATION DATA — DECORATION OF CELOTEX

PLASTIC PAINTS, STAINING, PAINTING, PAPERING, ETC.

NOTE: *For complete information on the decoration of Celotex, Celotex Panel Board, and Celotex Hard Board, ask for Technical Notes 43 and 44.*

(1) WATER PAINTS

Calcimines and water paints should be applied directly to unsized Celotex, although calcimine may also be applied to varnish-sized Celotex to facilitate removal by washing.

Water paints of the casein base class are washable to a certain degree but not quite as much so as oil or varnish paints.

A single coat of good casein base water paints, such as Sunflex, Rayolite, Luminall, and Kameo will give very good coverage on Celotex, although two coats are recommended. Some of these paints are available tinted in a variety of attractive pastel shades. Others can be tinted from the white by the addition of dry colors in accordance with manufacturers' directions.

(2) STAINS

Stains may be used where the natural color of the Celotex is to be modified without destroying the Celotex texture and where its acoustical absorption properties are of importance. While a variety of stains are available, glue stains give the best results on Celotex. A satisfactory glue stain may be made by dissolving ½ lb. of flake or ground glue in a gallon of boiling water. After the glue has been thoroughly dissolved, dry color is added in amounts depending on the depth of tone required. The dry colors are best added by mixing them with a small amount of water, stirring to a thin paste which is more easily taken up by the glue solution. Glue stains of this type must be used quite promptly after preparation. Preferably, they should be applied while they are still warm. Alcohol stains are not recommended—they dry too rapidly, leaving unavoidable brush marks.

(3) OIL OR VARNISH PAINTS

Celotex must be properly sized before application of oil or varnish paints. A satisfactory glue size may be made by dissolving 1½ lb. of chip or flake glue to a gallon of boiling water. The following prepared oil or varnish sizes have the advantage that they may be obtained ready mixed and properly proportioned for direct application to Celotex.

NAME	MANUFACTURER	CITY
Primer for Celotex	Devoe & Raynolds	New York City
Compo Seal	E. I. du Pont de Nemours & Co.	Wilmington, Del.
Special Primer No. 44	The Glidden Company	Chicago, Ill.
Fill-Coat	Benjamin Moore & Co.	Chicago, Ill.
Peel-Kill Pigment Primer No. 7851	Marietta Paint & Varnish Co.	Marietta, Ohio
Nepto-Seal	The Lowe Brothers Co.	Chicago, Ill.
Plasco Primer-Sealer	Pittsburgh Plate Glass Co.	Pittsburgh, Pa.
Tri-Seal	Sherwin-Williams Co.	Cleveland, Ohio

The best results are obtained if the Celotex is sanded lightly after the size coat has dried thoroughly.

(4) PLASTIC PAINT AND WALL COVERINGS

PREPARING CELOTEX—Before applying plastic paint or wall coverings, apply Celotex and reinforce all joints according to instructions in Specification No. 5, page 15.

PLASTIC PAINTS—The rough Celotex surface is recommended. Plastic paints are thick paints which can be textured by manipulating the brush or various tools to produce various textures and effects. They are divided into two groups—those prepared by the addition of water to a powder and those having a linseed oil base furnished prepared ready for use. Water base plastic paints (unless excessively alkaline) can be applied directly to unsized Celotex. Size Celotex for oil base plastic paints.

WALL COVERINGS—Use the smooth side of Celotex for applications of wall coverings. In addition to wall papers and canvas, fabrics such as Sanitas, leathers, and even thin plywoods and thin metal sheets may be applied. Wall paper may be applied over a lining paper if desired. If special requirements must be met, follow the manufacturer's standard recommended method of procedure.

(5) STENCIL DECORATION

Where a light touch of color is desired or where a means of accenting a design is sought, stencils are recommended. Border stencils are particularly attractive on Celotex interiors and are approved by leading decorators.

Stencil designs may be cut in oil paper or metal. They are held in position by hand or by thumb tacks while the color is applied with a stiff stencil brush. Colors ground in Japan are recommended. The Japan color paint should be thinned to the desired consistency with a mixture of six parts turpentine, three parts linseed oil, one part Japan drier. Stencils may be obtained locally. A booklet of attractive stencil designs may be obtained from the Ladies Home Journal, Philadelphia, Pa. for 10 cents, while the stencils themselves cost 15 cents each.

(6) MISCELLANEOUS DECORATIONS

Artistic decorative effects may be produced by carving the surface of Celotex, particularly in the case of large relief carving where detail is not required. A design is first laid out in pencil. Razor blades or sharp knives are then used to carve the Celotex.

Wallpaper Over Celotex

Celotex Texbord (Wood Veneer) *See next page*

SPECIFICATION No. 9 — INTERIOR FINISH

CELOTEX TEXBORD

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

Texbord should be applied to continuous surfaces only. It is not intended for direct application to framing or furring strips. In most instances Texbord will be applied to plastered surfaces, but if desired in new construction, a plywood backing may be substituted for plaster to receive the Texbord.

(2) MATERIALS

(2) Interior finish shall be **[walnut] [mahogany] [avodire]** Celotex Texbord **[6] [9] [12]** inches wide by **[8] [10]** feet long. (Random widths recommended.)

(2b) Adhesive shall be Celotex Texbord Adhesive.

(3) APPLICATION

(3a) SELECTION OF GRAIN—If boards are applied to the wall all in one width, care should be exercised that they are applied random with respect to grain, so that no two adjacent boards will be a duplication of figure (grain).

(3b) ADHESIVE—Apply Texbord Adhesive to both lap joints of each individual board. On the 12 inch wide planks it is also advisable to add a strip of adhesive about 3 inches wide down the middle of the length of the plank and a corresponding strip on the wall. This same special adhesive is used in applying Texbord to the backing along inside and outside corners as shown in accompanying sketches.

NOTE: *Texbord Adhesive is supplied in two dissimilar liquids in individual cans, the contents of which should be stirred together immediately prior to use. Any glue-spreading brush about 2 inches wide is satisfactory for brushing the adhesive. The brush should first be washed in water and it should be dipped into the adhesive while wet to prevent gumming of the bristles. In using Texbord Adhesive, care should be taken to keep the brush completely immersed in the adhesive while it is not in the hand and at the end of the day it should be thoroughly washed in water and any particles adhering to the bristles should be combed out with a steel brush. One gallon of adhesive will take care of the joints of about 600 square feet of Texbord.*

Texbord Adhesive bonds when it is dry by bringing two coated surfaces together under pressure obtained by means of hammer blows on a cushioned block.

Beveled boards 16 inches long, as illustrated in cross section in Figures 1 and 2, are effective for facilitating the spreading of the adhesive on the laps. After the adhesive has been spread on the edges of a few boards, these should be set against the wall and when the edges of five to ten boards have been coated, the first boards are ready for nailing.

Texbord Adhesive is also required for inside and outside corners as illustrated in Figures 3 and 4. In this case it should also be spread on to both surfaces. While the boards may be brought into position without waiting for the adhesive to dry, they should be hammered into position to insure bonding in about one hour after spreading the adhesive, by which time it has dried adequately.

If, after brushing the adhesive, the boards cannot be applied to the walls for several days, the adhesive may be revived by wiping the laps with a cloth dipped in carbon tetrachloride or a fresh coat of the adhesive should be applied.

(3c) NAILING—For nailing Texbord to plaster or plywood, 1-inch No. 17 galvanized wire nails with flat heads should be used. The nails should be spaced about 6 inches apart, and they should be driven at an oblique angle. The nails are driven through the under half of the lap into the plaster and the nail heads are subsequently covered by the overlapping portion of the next board as illustrated in Figures 3 and 4. The overlapping edge is next given a blow with a hammer, placing a cushioned wood block with the padded side next to the joint and striking it at short intervals with firm hammer blows. The block of wood should be shifted up and down the joint until a blow has been given to the joint at short intervals not to exceed 2 or 3 inches.

NOTE: *When Texbord is installed on bases which will not receive nails properly, the adhesives should be applied to the entire back surface of the Texbord and also the wall surface. The adhesive should also be used on the lap joints as previously specified. One gallon of adhesive will take care of about 150 square feet of Texbord applied in this manner.*

(3d) CORNER TREATMENTS—The method of treating inside and outside corners is illustrated in Figures 3 and 4. No supplementary mouldings or wood strips are required.

As application proceeds along the wall and into an inside corner, the last board is cut to width on the job so that it fits into the corner with a clearance of approximately $\frac{1}{10}$ inch. To proceed on the surface at right angles thereto, the next board is then marked by scribing and is cut to fit against the surface of the previous board. *(Continued on page 25)*

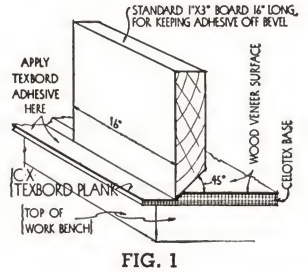


FIG. 1

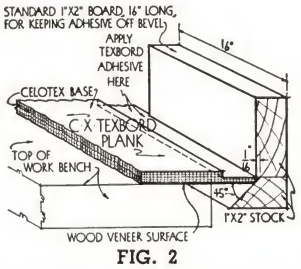


FIG. 2

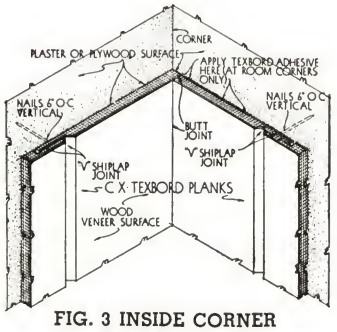


FIG. 3 INSIDE CORNER

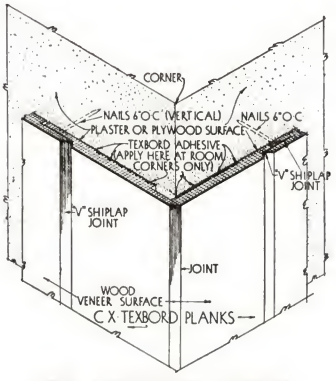


FIG. 4 OUTSIDE CORNER

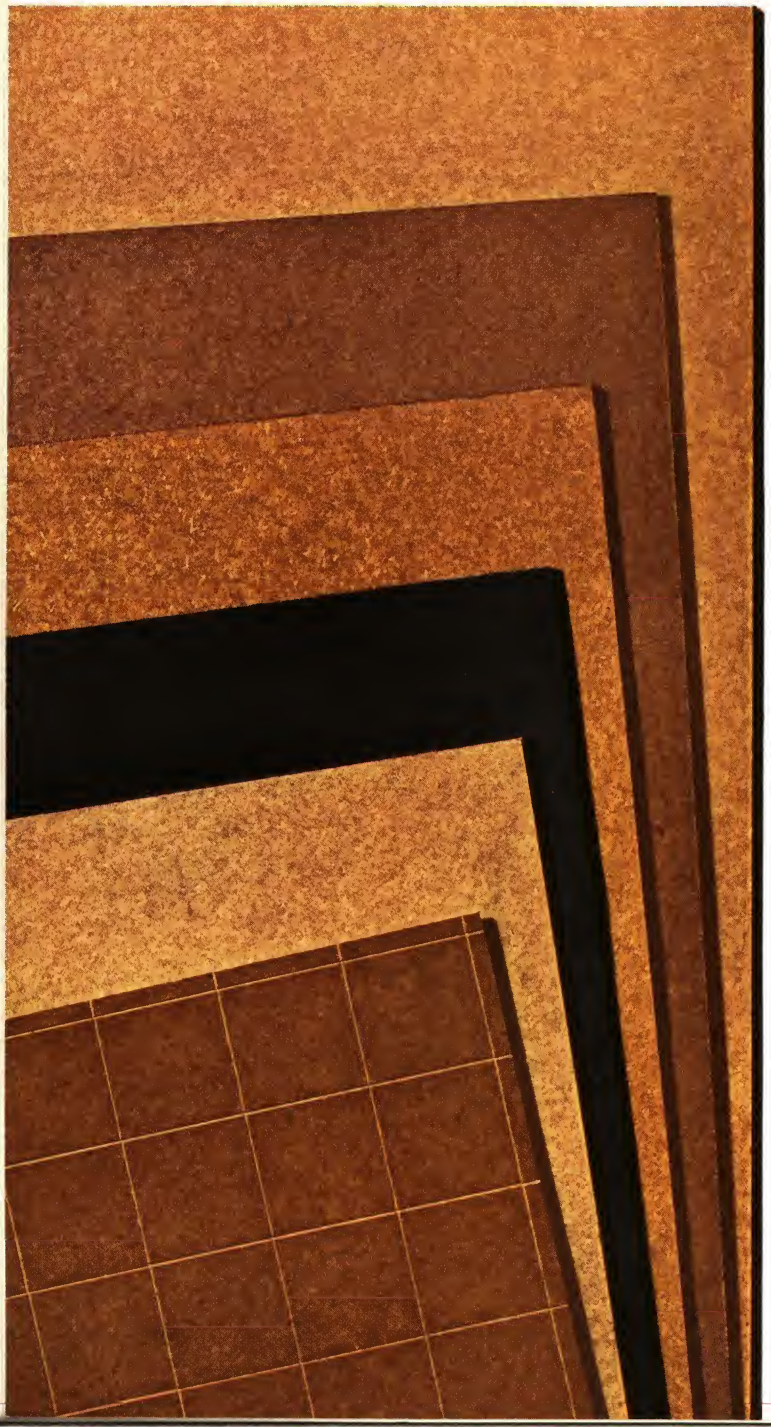
A PHOTOGRAPH IN NATURAL FULL COLOR

CELOTEX TEXBORD

Celotex Texbord, an actual fine cabinet wood veneer laminated to a Celotex Cane Fiber base, is an easily installed material of extraordinary richness and beauty. In a choice of beautifully grained veneers (see next page), Texboard is the obvious medium for achieving handsome wood-finished interiors at reasonable cost.

CELOTEX TEXBORD is shown at the right in full colors—mahogany, walnut, and avodire. All Texbord products are made of the finest genuine cabinet wood veneer, cut to procure the most beautiful grain—adhered to Celotex Cane Fiber Board—prefinished with filler, stain, and wax to a beautiful finish and ready to apply—manufactured in 6, 9, and 12 in. widths; 8 and 10 ft. lengths; ¼ in. thick—shiplapped joints—apply directly to any continuous surface with adhesive and nails—no nail heads show—curve around moderate arches—permanent, economical.

CELOTEX HARD BOARD products, shown below in actual color, give lifetime satisfaction wherever a hard surface is desired. Top to bottom, Celotex Hard Board, Tempered Hard Board, Studio Board, Black Tempered Hard Board, Panel Board, and Hardboard Tile. Also manufactured, but not illustrated, is a Green Tempered Hard Board.



MAHOGANY

WALNUT

AVODIRE

SPECIFICATION No. 9 CELOTEX TEXBORD (Cont'd from Page 22)

This cutting should be so that the overlap of the Texbord unit is removed, leaving the underlap. Application then proceeds one board after another as before.

In working toward an outside corner, similar procedure is followed. The fill-out is loosely placed in position so that it can be marked by scribing and then trimmed to allow approximately ⅛ inch overhang. A full Texbord unit is then applied to the surface at right angles thereto in such a manner that the overlap edge will rest against and conceal the cut edge of the previous unit. This detail is shown in Figure 4.

Corners can also be treated by covering them with wood strips or mouldings overlaid and nailed in place, but the method just described and illustrated in Figures 3 and 4 is preferred.

(3e) FITTING TO TRIM—In fitting Texbord to existing trim, baseboard, and cornice moulding, it is merely necessary to cut the board to such dimension that it will make a tight butt joint. Texbord is sufficiently thin so that this procedure can be followed without disturbing the trim which exists in finished buildings. In the case of new buildings, it is possible to make application of Texbord in such a manner that the trim, baseboard, and cornice moulding will overlay the Texbord.

(3f) MOULDINGS—Cornice mouldings, picture mouldings, chair rail mouldings, and other trim as required may be obtained in walnut, mahogany, and avodire from millwork and moulding manufacturers.

(4) FINISH

Celotex Texbord is prefinished by the manufacturer with a rubbed wax surface which is applied after sealing with a penetrating oil and stain. Care shall be exercised in erection to preserve this original finish.

CELOTEX HARD BOARD PRODUCTS

Celotex Hard Board Products, six of which are shown in color on the page opposite, should not be confused with Celotex Cane Fiber Insulation. Designed for different uses, they are denser and have no insulation value. They include several varieties of sturdy, serviceable boards, especially treated to resist moïsture and warping. They are unusually strong, tough and resistant to abrasion.

Celotex Hard Board products are used for wall paneling, wainscoting, partitions, and may also be cut on the job into attractive border overlays, friezes and ornaments. Celotex Hard Board and Panel Board are preferable for applications where the material is subject to abrasion and severe usage.

Particularly suited for interior decoration are Hard Board (plain, tempered, and tile), Panel Board and Studio Board.

For sizes and further and more specific uses of these and other miscellaneous wallboard products consult table on Page 5.

All Hard Board products can be sawed, cut or drilled with standard woodworking tools. They may be applied by nailing to framing or furring (12 or 16 inches on center), or to a continuous wood backing, or by cementing and nailing to a suitable base such as sound plaster.

For complete specifications for any product and any particular use write to The Celotex Corporation.

Hard Board Tile as a Bath Room Finish

Walls Surfaced With Hard Board Tile

GENERAL INFORMATION AND SUGGESTIONS

CELOTEX ROOF INSULATION

(See Specification No. 10)

Celotex Roof Insulation is especially designed for the insulation of roofs under built-up roofing, slate or tile roofs. It provides a highly desirable surface for mopping with asphalt or pitch. The firm support provided for the roof covering by Celotex Roof Insulation guards the finished roof surface from damage by mechanical abrasion or traffic.

In order to obtain the best results, the following supplementary directions covering work to be done by contractors other than the roofer should be considered in preparing the architect's specifications.

SHEET METAL WORK

Roof insulation warrants the installation of the very best type of flashing construction. It is important that insulation be protected from the elements.

Where skylight curbs, monitor curbs, saw-tooth curbs or the like are to be flashed, it is important that a condensation drip pan flashing of metal be provided under the sill of the sash frame, in order to expel any moisture that may form on the back of the glass, thus protecting the roofing and the underlying layers of insulation.

Where hanging gutters are used the gutter should be furnished in a complete unit provided with roof flange, gravel stop (if roof surface is of gravel or slag), and the entire girth of the gutter formed in one continuous sheet of metal, properly hung with roof brackets.

At all exposed eaves metal eave strips must be extended down over the edges of the roof boarding and securely fastened in place and provided with a drip that will expel all the drainage water.

All types of vents, outlets, drains, scuppers and the like, should be properly flashed and installed in a substantial, workmanlike manner.

Where large or heavy ventilators or standpipes or louvres are installed, they should be securely anchored to the underlying roof deck and should not depend for fastening upon the insulation.

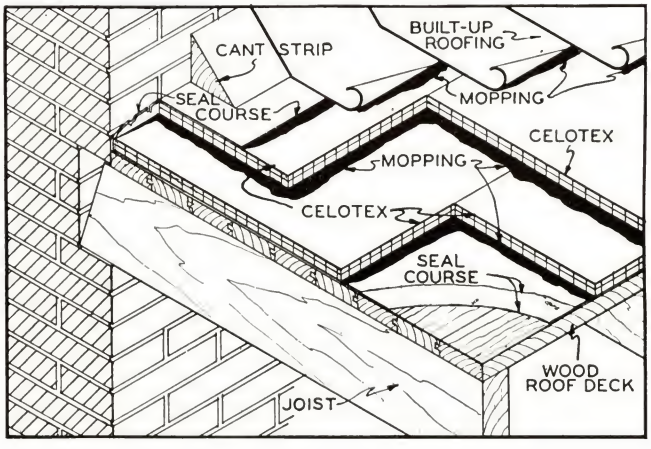
WOOD NAILING STRIPS

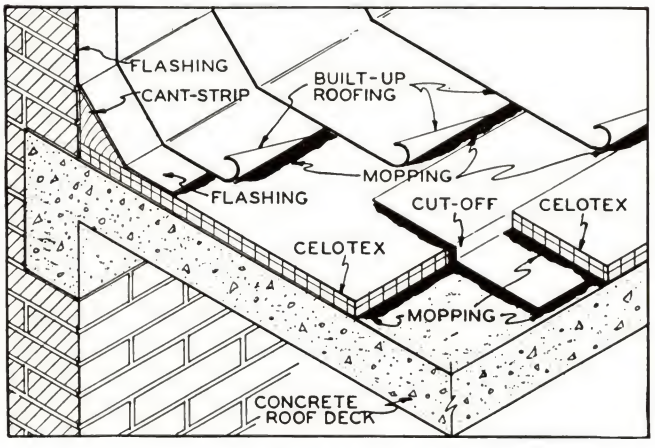
Where sheet metal flashing aprons and flanges of any nature are used, it will be found of advantage to apply a wood nailing strip the full thickness of the insulation, and 1 in. wider than the aprons to serve as a nailing base for such aprons and flanges. This nailing strip should be rigidly secured to the roof deck with nails, lag bolts, expansion bolts, or similar means of attachment.

SLATE AND TILE WORK

Celotex Roof Insulation constitutes an ideal medium for the insulation of slate and tile roofs.

Application of Celotex Roof Insulation can be handled satisfactorily by the slate and tile contractor. Care should be exercised, however, in application of both slate and tile to fasten joints securely to underlying roof deck.





CONCRETE WORK

Where a roof deck is of concrete, it is important that the roof be uniformly graded and that the surface be finished smooth and level and free from depressions. The concrete should be dry before the insulation layer is applied.

CANT STRIPS

Wherever cant strips are provided along the wall line, the Celotex Roof Insulation should first be installed over the roof deck surface and the cant strips applied over the Celotex Roof Insulation layers.

This also applies on sawtooth curbs, monitor curbs, and the like, where cant pieces are installed.

IMPROVED APPLICATION SUGGESTIONS

Under conditions of unusual severity, and as an added point of quality in roof insulation work, the following suggestions are advanced:

SEAL COURSE—A seal course consisting of one layer of 14-lb. saturated felt, lapped 2 in. and mopped to the deck (or mopped over rosin sized sheathing nailed to wood deck), prior to the application of the Roof Insulation, permits sealing in of the roof shortly after the roof deck is completed, thus protecting the interior of the building from the weather.

By sealing the roof at this time, it is not necessary that the contractor immediately proceed with laying of the insulation and roofing, hence the roofing contractor may select weather most favorable to roofing work, and may be the last trade to work upon the roof, thereby preventing possible damage to the roofing from other trades.

VAPOR CUT-OFF—When high humidities prevail under wood roof decks or steel decks, it is essential that a **vapor-proofing course** be applied over the decks prior to the application of the insulation. This course is heavier than the seal course mentioned above, and is described in detail under section of the Roof Insulation Specifications following.

WATER CUT-OFF—Water cut-offs consist of strips of saturated roofing felt 8 to 10 in. wide, stuck in bitumen to the roof, carried over the edge of the insulation, and stuck to the top surface of the insulation. By installing these water cut-offs approximately 24 in. from and parallel to all vertical walls, such as parapets, pent-houses, skylight curbs, etc., and by dividing the balance of the roof area into rectangular areas approximately 30 ft. on a side, each such area of insulation is thus isolated from adjoining areas. This protection is particularly suggested where high humidities are constantly maintained beneath the deck.

SPECIFICATION No. 10—INSULATING FLAT ROOFS

CELOTEX ROOF INSULATION UNDER BUILT-UP ROOFING

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) INSULATING MATERIAL

Insulation shall be **[specify]** thick Ferox Treated Celotex Roof Insulation laid in **[one] [two]** layer **[s]**. Boards shall be 22 inches wide x 47 inches long. Celotex shall be kept dry before, during, and after application.

NOTE: *Offset edges are optional in 1 inch and greater thicknesses.*

The following roof areas shall be insulated:

NOTE: *List and locate. If more than one thickness of insulation is required on various roof areas, list and locate each separately.*

(2) GENERAL

All Celotex shall be kept dry before, during, and after application. Only as much Celotex shall be laid over roof area as can be covered by finished roofing in any one day. Lay Celotex in **[one] [two]** layer **[s]** over entire roof area. Adjoining edges of boards shall be brought to a moderate contact but shall not be forced into place. Where the roof meets vertical surfaces, such as parapets, penthouses, etc., boards shall be cut in a neat, workmanlike manner to insure proper joining without forcing. Boards shall be laid in parallel courses with end joints in each course breaking with those of adjoining courses.

Where insulation is laid in two (2) layers, the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break with those of the first layer.

APPLICATION A—OVER WOOD ROOF DECKS

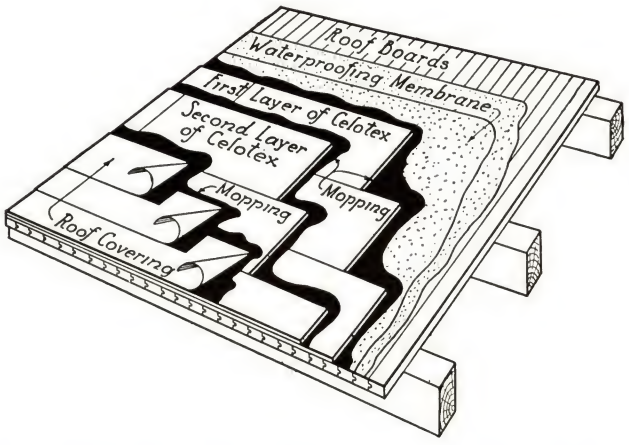
NOTE: *This specification applies to insulation against heat loss and to protect against top story excessive summer heat. Where high humidities are maintained, use Application B.*

(3) ROOF DECK

The surface of the roof deck shall be broomed clean, free from dirt, loose material, and thoroughly dry. All loose or springy boards shall be properly nailed before insulation is laid.

(4) BUILDING PAPER

NOTE: *Use this clause in case the insulation is laid in one layer.*



The entire roof area shall be covered with two (2) plies (lapped half) rosin sized building paper or coated felt. Nail sufficiently to hold in place until the insulation is laid over it.

(5) APPLICATION

(5a) NAILS—Nails shall be of sufficient length to pass through the insulation and penetrate the wood roof deck at least ¾ inch.

(5b) NAILING — Space nails 12 inches apart. Each board shall be secured in place by nailing along each edge and staggered along the longitudinal center line.

Nailing of two (2) layer insulation shall be through the second or top layer only.

APPLICATION B—OVER WOOD ROOF DECKS WHERE HIGH HUMIDITIES ARE MAINTAINED

NOTE: *This specification applies where high humidities are maintained and prevention of condensation is necessary. Where this condition does not exist, use Application A.*

(6) ROOF DECK

The surface of the roof deck shall be broomed clean, free from dirt, loose material, and throughly dry. All loose or springy boards shall be properly nailed before insulation is laid.

(7) VAPOR CUT-OFF

NOTE: *Include over entire roof area in conjunction with roof insulation on wood roof decks over rooms carrying high manufactured or incidental humidities. Select one of the two types specified below — select also, dependent on the type of finished roofing specified — pitch or asphalt.*

(7a) Over the wood roof deck first lay a layer of coated (rosin sized) building paper lapped 2 inches at joints and nailed sufficiently to hold in position. Over the building paper lay two (2) plies (lapped half) of 14 lb. saturated roofing felt. Nail the back edge of each sheet with tin-capped, galvanized, barbed roofing nails spaced 12 inches on center. All laps shall be mopped back 12 inches with hot **[coal tar pitch] [asphalt]**. Do not mop over this membrane until just prior to the laying of insulation.

NOTE: *Specify pitch with tar saturated felt and asphalt with asphalt felt.*

(7b) Over the wood roof deck lay two (2) plies (lapped half) of 34 lb. per square prepared asphalt roofing having one side coated. Lay coated side down. Nail the back edge of each sheet with tin-capped, galvanized, barbed roofing nails spaced 12 inches on center. All laps shall be mopped back 12 inches with hot asphalt. Do not mop over this membrane until just prior to the laying of insulation.

(7c) Wrap the vapor cut-off around edge and mop back 6 inches on top of insulation at walls, skylight curbs, and under monitor skylight sash.

(8) APPLICATION

Mop the exposed vapor cut-off felt liberally with hot **[coal tar pitch] [asphalt]**. Only sufficient area to provide complete embedment of each Celotex board shall be mopped at a time. Embed each board firmly in the bituminous mopping.

(8a) TWO LAYER INSULATION—Mop exposed surface of first layer liberally with hot **[coal tar pitch] [asphalt]**. Only sufficient area to provide complete embedment of each board shall be mopped at a time. Embed each board of second layer firmly in the bituminous mopping.

NOTE: *Specify pitch with tar saturated felt and asphalt with asphalt felt.*

APPLICATION C—OVER CONCRETE, GYPSUM, AND UNIT TILE

NOTE: *Where high humidities are maintained, use vapor cut-off as in paragraph (12).*

(9) ROOF DECK

(9a) GENERAL—The surface of the roof deck shall be reasonably smooth without depressions, broomed clean, free from dirt and loose material, and thoroughly dry.

(9b) UNIT TILE CONSTRUCTION—The joints of all tiles shall be properly pointed up.

NOTE: *Include (9b) where deck is of cement, gypsum, book or similar tile construction.*

(10) APPLICATION

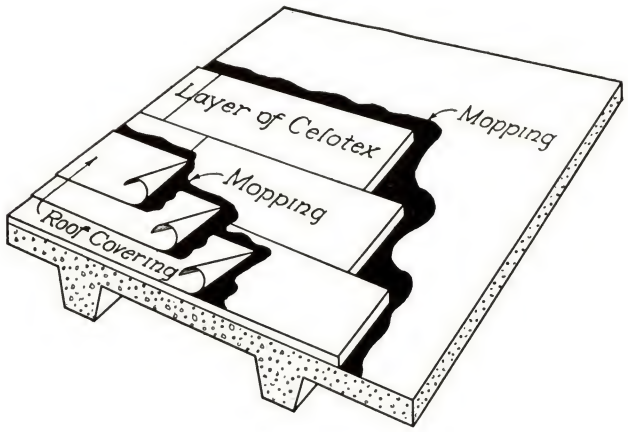
(10a) PRIMING THE DECK—Prime the deck with asphalt primer.

NOTE: *Include priming if asphalt mopping and asphalt felt are used for seal course. If coal tar pitch and felt are used, no primer is necessary. Use a liberal coating of waterproof primer over gypsum decks.*

(10b) MOPPING THE DECK—[Mop the entire roof area] [spot or strip mop the individual tiles or units] with a coat of hot **[coal tar pitch] [asphalt].** Only sufficient area to provide complete embedment of each Celotex board shall be mopped at a time. Embed each board firmly in the bituminous mopping.

NOTE: *Specify pitch with tar saturated felt and asphalt with asphalt felt.*

NOTE: *If the deck is monolithic construction, (concrete, poured gypsum), the mopping shall be continuous. If the deck is of precast units (book tile, precast gypsum, concrete), coat the entire surface with a light and uniform mopping of asphalt; if coal tar pitch is used, spot or strip mop the individual units, keeping mopping back 4 inches from joints. Mop tile so as to prevent drippage.*



(10c) TWO LAYER INSULATION—Mop exposed surface of first layer liberally with hot **[coal tar pitch] [asphalt].** Only sufficient area to provide complete embedment of each board shall be mopped at a time. Embed each board of second layer firmly in the bituminous mopping.

NOTE: *Specify pitch with tar saturated felt and asphalt with asphalt felt.*

APPLICATION D—OVER STEEL ROOF DECKS

(11) ROOF DECK

The steel deck shall be securely anchored to the roof purlins and all joints shall be made rigid.

(12) VAPOR CUT-OFF

NOTE: *Include this seal course if the rooms beneath the roof carry high humidities.*

Mop entire roof area with a coat of hot asphalt. Over the mopping, while hot, lay two (2) plies (lapped half) of 14-lb. saturated roofing felt. Wrap vapor cut-off around edges of insulation and mop back 6 inches at walls, skylight curbs, and under monitor skylight sash. Do not mop over this membrane until just prior to laying of insulation.

(13) APPLICATION

Mop the **[deck] [vapor cut-off]** with a liberal coat of hot asphalt. Only sufficient area to completely embed each Celotex board shall be mopped at a time. Embed each board firmly.

(13a) TWO LAYER INSULATION—Mop the exposed surface of the first layer liberally with hot asphalt. Only sufficient area to provide complete embedment of each Celotex board shall be mopped at a time. Embed each board of the second layer firmly in the bituminous mopping.

(13b) FOR STEEP DECKS—In addition to the mopping, each Celotex board shall be secured to the steel deck, along the top, with three (3) bolts, metal darts, sheet metal screws or other effective device.

CELOTEX PROMENADE TRAFFIC TOP

DESCRIPTION—Ferox-treated Celotex Cane Fiber Insulation Board impregnated with selected bitumens by a special process.

COLORS—Black, green and red—also furnished unpainted.

SIZES AND THICKNESSES—Units are 12 x 12 in., 12 x 24 in., 24 x 48 in. in area, ¼ and ½ in. thick. Edges are beveled.

RECOMMENDED USES—Promenade surfaces on roofs, play courts, ramps, aisleways, and other similar surfaces subjected to foot traffic and exposed to the outside weather.

APPLICATION SPECIFICATIONS

(1) PREPARATION OF SURFACE—The surface over which the Promenade Traffic Top is to be installed shall be firm, smooth, dry, and free from dust and debris.

(1a) NEW ROOFS—Install built-up roofing in accordance with roofing manufacturer's specifications. If pitch and felt roofing is used, gravel or slag surfacing may be omitted, but the exposed surface of roofing must be kept free of pitch.

(1b) OLD ROOFS—If roof is blistered, cut blisters and apply 24 lb. felt, lapping sheets 3 inches and cementing in place with hot asphalt or cold plastic cement. Where the old roof is smooth and in good condition, Promenade Traffic Top may be laid in plastic coating applied directly over the old roof covering, as directed in paragraph (2). Where necessary, install new flashing over existing flashing consisting of two layers of 14 lb. saturated roofing felt.

Celotex Promenade Traffic Top on play area of Manhattan Shelter, New York City

(1c) CONCRETE FLOORS—If Promenade Traffic Top is installed over an outside concrete surface, the concrete shall first be liberally coated with asphalt primer.

(2) APPLICATION—Over the surface prepared in accordance with paragraph (1), apply with a trowel a uniform coating of Celotex Traffic Top Plastic Compound approximately ⅛ inch thick, into which embed the Celotex Promenade Traffic Top with joints staggered. This will require about 65 lb. of Celotex Traffic Top Plastic Compound per square. (For best results it is recommended that the back of each unit also be covered with a thin coating of the Celotex Traffic Top Plastic Compound immediately before application.) Each unit shall be "walked down" or rolled to insure complete embedment and exclusion of all air pockets. Joints between boards shall range from about ⅛ inch for small units to ¼ inch for large units and shall be carefully calked with Celotex Traffic Top Plastic Compound and wiped clean of surplus plastic. The Celotex Promenade Traffic Top shall be accurately laid out and fitted to adjoining work.

NOTE: CLEANING SURFACE—*Celotex Traffic Top Plastic Compound may be removed from the surface of the Celotex Promenade Traffic Top by means of clean cloth or waste saturated with kerosene.*

CELOTEX MIL-FLOR TRAFFIC TOP

DESCRIPTION—Ferox-treated Celotex Cane Fiber Insulation Board impregnated with selected bitumens by a special process. Has greater density and toughness and is less resilient than Celotex Promenade Traffic Top.

SIZE AND THICKNESSES—Units are primed, ready to lay, unpainted, 24 x 48 in. in area, ¼ and ½ in. thick. Edges are beveled.

RECOMMENDED USES—Celotex Mil-flor Traffic Top is exceptionally well adapted for medium duty traffic surfaces in factories.

DO NOT USE—Where floors are subjected to excesses of oil, animal fats and greases, or in heavy industry plants where floors are subjected to severe abuses from abrasion by heavy machinery parts or heavy factory trucks with narrow steel wheels.

CELOTEX TRAFFIC BOARD

DESCRIPTION—Ferox-treated Celotex Cane Fiber Insulation Board impregnated with selected bitumens by a special process.

SIZE, THICKNESS, ETC.—Units are unpainted, 24½ x 48½ in. in area, ¼ and ½ in. thick. Edges are square.

RECOMMENDED USES—Celotex Traffic Board has two (2) major uses—namely, as cushioning under wood block flooring to provide resiliency and to reduce sound transmission and drum effect, and as protection of waterproofing courses.

Waterproofing courses of saturated felt and asphalt or pitch must be carefully safeguarded against mechanical injury until they are permanently enclosed by masonry or some other protective construction. Such membranes are constructed to resist hydrostatic pressures; if they leak at any point, water will penetrate them and their usefulness ceases. A heavy investment may easily be destroyed by a small puncture in the membrane. Celotex Traffic Board, applied in pitch or asphalt to the surfaces to be protected, provides an economical method of shielding such membranes from mechanical abrasion or damage.

APPLICATION SPECIFICATIONS—UNDER WOOD BLOCK FLOORS

(1) OVER MASONRY SUB-FLOORS

(1a) Preparation of Floor—The surface over which the Celotex Traffic Board is to be installed shall be clean, dry, level concrete or other masonry floor. Depressions in the concrete or masonry shall be filled with a compound consisting of emulsified asphalt, Portland cement and sand, and allowed to set and dry.

Floors subjected to hydrostatic pressure should be waterproofed by means of a membrane waterproofing course applied over the concrete slab.

(1b) Application of Celotex Traffic Board—Traffic Board may be embedded in either hot asphalt or cold asphalt compound (asphalt emulsions are not recommended for this purpose). Where hot asphalt is used, concrete should first be primed with an asphalt primer and the Traffic Board embedded in a liberal mopping of hot asphalt. Where asphalt compound (preferable) is used, trowel compound directly on to masonry floor to a thickness of $\frac{1}{16}$ to ⅛ inch as required to present a plane surface and embed Traffic Board therein. All joints shall be carefully pointed and wiped clean of surplus compound. The Celotex shall be carefully fitted together and all joints staggered.

Traffic Board may be formed to moderate projections in the masonry floor by gouging the back surface with a linoleum knife.

(2) OVER WOOD SUB-FLOORS

(2a) Application of Celotex Traffic Board—Nail the Celotex Traffic Board directly to wood sub-floor, using 1 inch standard galvanized roofing nails. Space nails 9 inches apart down the center of each unit and 6 inches apart along, and 1 inch from edges.

(3) APPLICATION OF FLOORING—The wood block flooring should be applied over the Traffic Board in bituminous compound in accordance with the flooring manufacturer's specifications.

Wood Block Flooring being applied over Celotex Traffic Board

Celotex Traffic Board applied as protection course on foundation of State Parkway Bridges, New York City

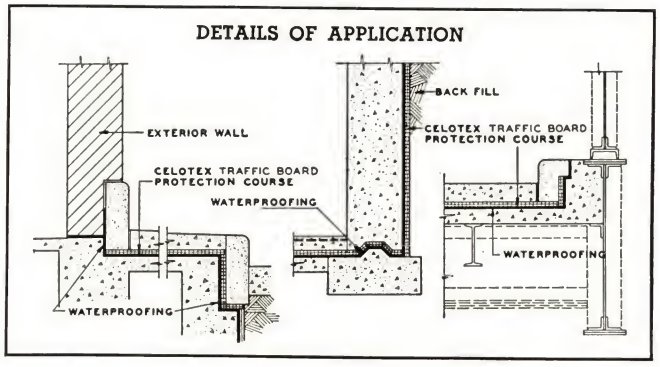
APPLICATION SPECIFICATIONS—WATERPROOFING PROTECTION

(1) WATERPROOFING—Waterproofing or dampproofing treatment shall be applied to wall or floor areas in accordance with established specifications.

(2) APPLICATION OF CELOTEX TRAFFIC BOARD—As the waterproofing treatment is given its final mopping, embed a layer of Celotex Traffic Board promptly therein with joints broken and all edges in moderate contact.

On vertical surfaces use a wooden mallet to procure over-all contact; on horizontal surfaces press down on all units to insure intimate bond.

(3) BACK FILL OR MASONRY—Back filling, laying of finished floor and other subsequent operations should immediately follow application of Celotex Traffic Board protection course.



NOTE: *For moderate conditions Celotex Roof Insulation may be used. Size, 22 x 47 inches, 1/2 and 1 inch thicknesses.*

CELOTEX VAPORPROOFED LOW TEMPERATURE INSULATION

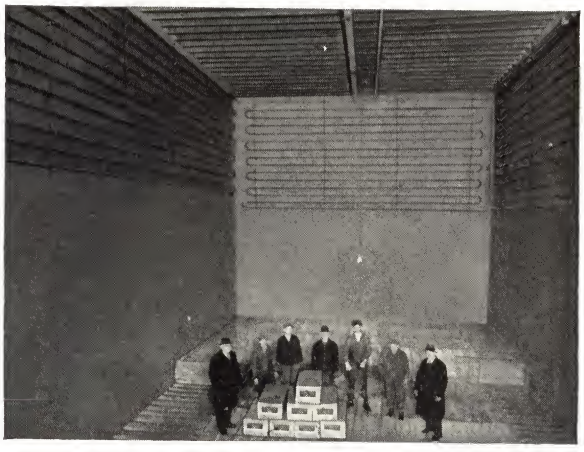
Protection against water vapor and moisture is essential in cold storage installations whether the material be fibrous, cellular, granular or of any other type of porosity. For years past efforts have been made to seal insulation during application with hot asphalt or plaster.

FACTORY SEALED—Each unit of Celotex VLTI is factory sealed by a special process far more effective than hand-labor methods on the job—the insulation receiving additional protection from the asphalt used in application. Furthermore Celotex VLTI, like all Celotex Cane Fiber products, is manufactured under the Ferox Process (patented) and therefore effectively resists damage by dry rot, fungus growth, and termites.

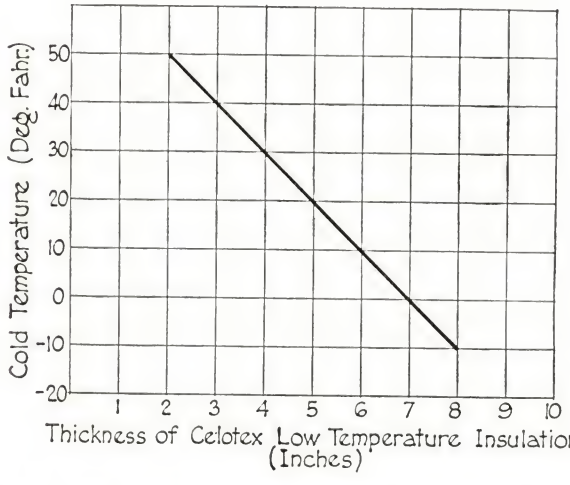
Because each block is isolated from every other block, should damage occur at a given point, moisture cannot be communicated throughout the insulated structure. The high efficiency requirements of cold storage insulation are fully met by Celotex VLTI—this material having low conductivity, structural strength, resistance to damage and abuse and being readily applied. Its conductivity, based on Armour Institute tests, is 0.30 B.t.u. per hour, per square foot, per degree Fahrenheit, per inch thickness.

Celotex VLTI, because of the factory seal, is particularly adapted for use in humidified residences in combination with masonry construction. The VLTI is installed between two masonry walls of hollow tile, brick, cinder or concrete blocks or monolithic concrete, or combinations of these materials.

SIZES—The standard sizes of Celotex VLTI are 12 inches x 36 inches and 18 inches x 36 inches; half-size blocks, 9 inches x 36 inches and 18 inches x 18 inches, for breaking and staggering joints, are also available. Thicknesses are 1 inch, 1½ inch, 2 inch, 2½ inch, 3 inch, 3½ inch, and 4 inch.



Binnewater Ice Co., Kingston, N. Y.: 10,878 feet of VLTI



FLEXCELL EXPANSION JOINT

DESCRIPTION—Flexcell Expansion Joint is made of Celotex Cane Fiber Board impregnated and coated by a patented process with a durable protective asphalt. Flexcell has been successfully used in major projects since 1929 as evidenced by the following installations:

Twelve leading State Highway Departments for their highway and bridge construction.

Sidewalks of Rockefeller Center and Knickerbocker Village in New York, two of the major building projects of recent years.

Two of the world's largest bridges, the Triborough Bridge joining Manhattan, Bronx and Queensboro, and the San Francisco-Oakland Bay Bridge.

The new Chicago Lake Shore Outer Drive.

Chicago Park District and WPA for sidewalks, curbs, gutters, pavements, retaining walls, swimming pools, and other uses.

FLEXCELL IN APPLICATION
Concrete Sidewalk with Flexcell Expansion Joint

ADVANTAGES—The reasons for Flexcell's success and increasing demand is summarized below.

(1) Has proven its durability.

(2) Will not extrude when placed under compression.

(3) Is resilient and re-expands when released from compression.

(4) Due to rough surface adheres to concrete.

(5) May be easily compressed.

(6) May be easily cut with hand or power saw.

(7) Retains its shape while handling.

(8) Its light weight permits quick and workmanlike installation.

(9) May be stored indefinitely without deterioration or change of shape.

(10) Gives neat finished joint and requires no trimming.

RECOMMENDED USES—For expansion joints in concrete work, such as streets, sidewalks, curbs and gutters; retaining walls, bridges, viaducts; airport runways and hangars; stadiums, swimming pools, private concrete work adjoining city sidewalks or curbs; service stations, tennis courts, drive-in markets, loading platforms, stadiums; around bearing columns extending through concrete floors; steel joists at bearing on masonry walls; concrete and tile roofs; concrete houses; glass block wall construction; machine cushioning.

INSTALLATION—The joint sections shall be cut to the exact cross section of the concrete in which it is to be installed and shall be held in accurate position and alignment in a suitable manner while the concrete is being poured. When carrying or placing, the material should be handled on edge to minimize danger of breaking. In sidewalk, curb and gutter, and general concrete slab construction, Flexcell may be placed so that the exposed edge of joint will be flush with the surface of the slab, and the concrete neatly finished off where it contacts the joint filler. No concrete should extend over or on the joint filler.

SUGGESTED SPACING AND THICKNESS OF FLEXCELL

When expansion joints are placed at approximate intervals of	10′ to 20′	20′ to 30′	30′ to 50′	50′ to 70′	70′ to 100′
Suggested thickness of joint filler should be.....	¼″	⅜″	½″	¾″	1″

CELOTEX CEMESTO

DESCRIPTION—A completely fabricated, fire and moisture resistant insulating wall unit, consisting of Ferox-treated Celotex Cane Fiber Insulation Board surfaced either one side (S1S) or on both sides (S2S) with asbestos cement. It can be nailed, drilled, etc. with regular carpenter's tools.

SIZES AND THICKNESSES—Units are 4x4 ft., 4x6 ft., 4x8 ft., 4x10 ft., 4x12 ft. in area, ½, 1, 1½, 2 in. thick Celotex surfaced one or both sides with asbestos cement ⅛ in. thick.

RECOMMENDED USES—As an integrally finished interior and exterior wall or interior partition material. Also used industrially for dry kilns, air-conditioned rooms, air ducts, factory partitions, etc.

APPLICATION SPECIFICATION DATA

(1) APPLICATION OF S1S CEMESTO TO WOOD FRAMING—Cemesto surfaced one side requires adequate fastening to framing through the center of the board. Suitable framing consists of standard wood framing spaced 12 inches or 16 inches on center with headers at horizontal joints, or 24 inches with headers at horizontal joints and intermediate headers not over 48 inches apart. Nail Cemesto to framing with nails spaced approximately 8 inches on center on intermediate nailing bases, 4 inches on center around edges. Nail first to intermediate framing, then around edges. Use common nails of length approximately twice the thickness of Cemesto. Use galvanized or coated nails where high humidities are present. See Figures 1, 2, and 3 for typical details.

(2) APPLICATION OF S1S CEMESTO TO STEEL FRAMING—Spacing of framing should be same as in paragraph (1). Apply Cemesto by bolting to framing, with bolts spaced approximately 12 inches on center on intermediate bearings and around edges. If bolts with countersunk heads are used, the facing of Cemesto should be countersunk. When battens are used over joints, bolt through batten, Cemesto and framework. Tighten bolts to a snug fit but not so tight as to compress Celotex and indent the surface.

(3) APPLICATION OF S2S CEMESTO TO WOOD FRAMING—In addition to nailing to standard wood framing as described above in paragraph (1) for SIS, Cemesto surfaced two sides may be used where supports are placed only along the edges.. This application permits variations from standard framing construction. For example, 1½ inch S2S Cemesto may be applied as a "curtain wall" using 2x4 framing spaced 4 feet 1⅞ inches on center with additional blocking to provide stiffness and bring flush on one surface. The joint is then covered with a batten and caulked. See Figure 4. When supported only at edges, wood or metal strips should be used over the joints, nailed through the Cemesto to the framing, thus providing a continuous support. Headers should be provided at horizontal joints. The maximum span recommended for ½ inch S2S is 2 feet; 1 inch S2S and greater thicknesses may have spans up to 4 feet. A bearing surface of at least one inch should be provided. As this application does not permit development of the full bracing strength of Cemesto used as sheathing, the framing should be braced to increase its rigidity.

(4) APPLICATION OF S2S CEMESTO TO STEEL FRAMING—Steel framework should be erected with generally the same spacing as in paragraph (1) for wood framing, and of the proper size to carry the particular structure. Secure the Cemesto by bolting through metal battens to the framework. In many applications, instead of using battens, the Cemesto may be held in place between structural shapes. For interior partitions, a splined joint with ornamental bolts and washers approximately 30 inches on center eliminates need of battens in assuring proper alignment. Provision should be made in the framework for supporting doors, window and equipment by the framework, independently of the Cemesto. See Figures 5 and 6.

(5) JOINT TREATMENT—Generally Cemesto joints are covered with strips of asbestos cement, wood or metal. If desired, joints may be left plain, slightly beveling or rounding the edge of the face with a plane or sandpaper. For exterior joints and for interior joints in rooms where high humidities prevail, use a gasket of roofing felt or asbestos felt under the batten or caulk joint and batten with caulking compound and gun.

(6) FINISHING—It is not necessary to paint Cemesto when used as exterior finish. The asbestos cement surface of Cemesto demands special precautions in painting. Limeproof first coaters should be applied before painting with lead and oil paints. Water paints for interior use may be applied directly to Cemesto. Paint suitable for application over Portland cement and aluminum paints may also be applied direct. For unusual conditions of acid fumes, special acid resistant paint should be used. Leading paint manufacturers can recommend their products best adapted for painting asbestos cement surfaces, or The Celotex Corporation will assist in any problem.

See Page 34 for Details

APPLICATION OF CEMESTO

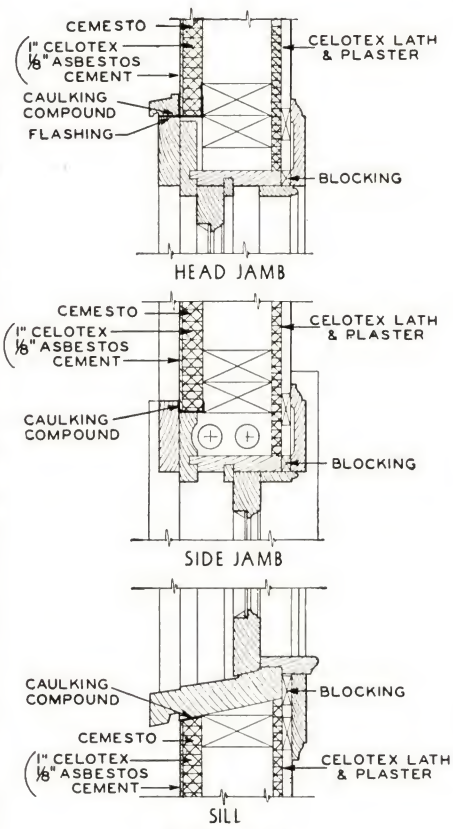


FIGURE 1

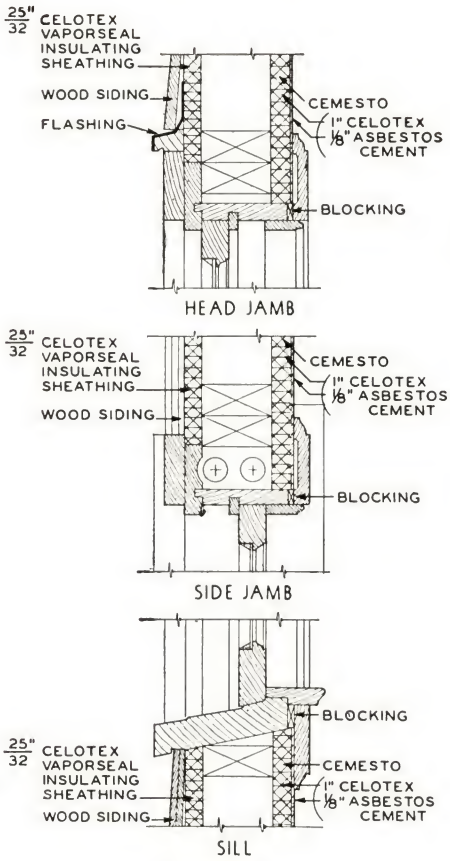


FIGURE 2

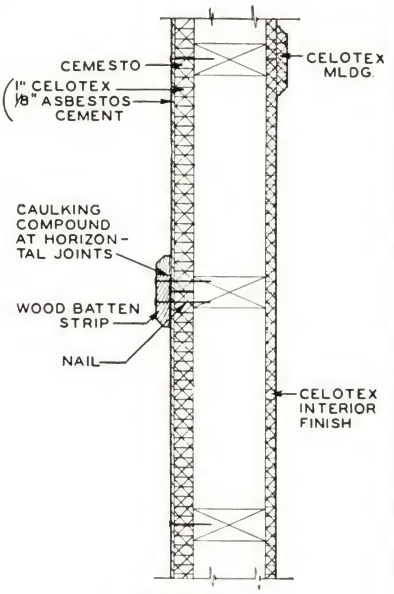


FIGURE 3

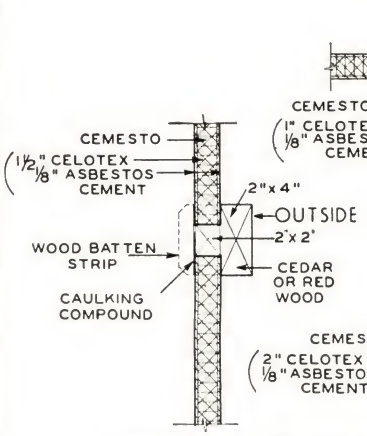


FIGURE 4

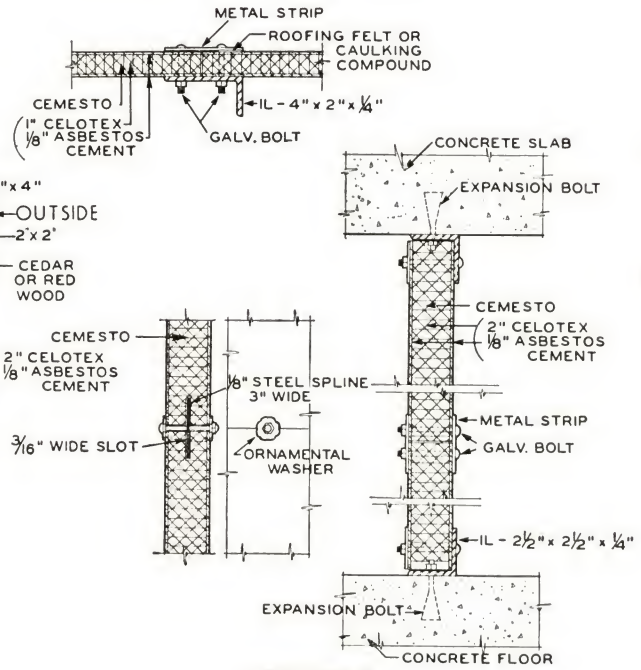


FIGURE 5

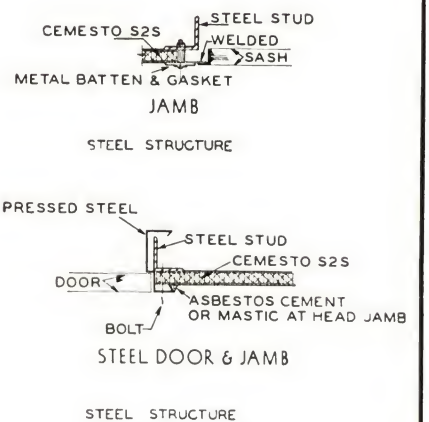
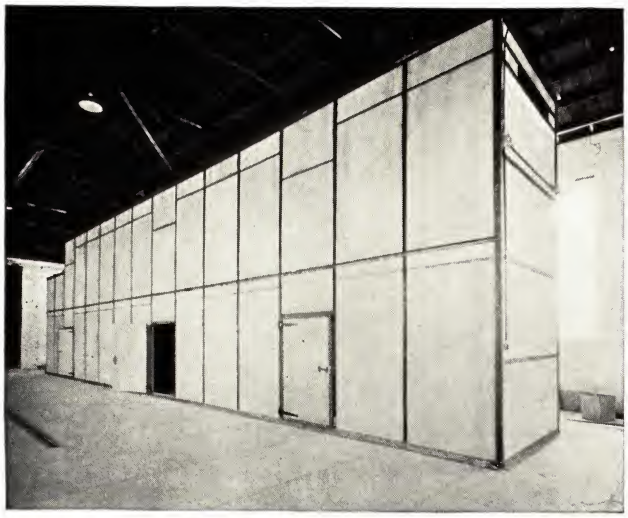
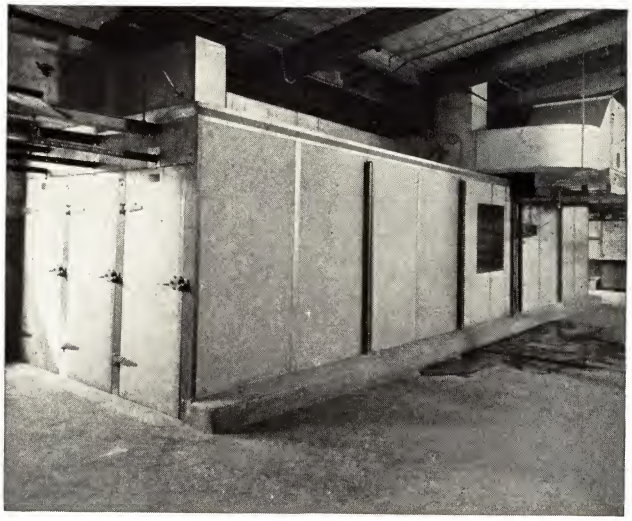


FIGURE 6

TYPICAL CELOTEX CEMESTO APPLICATIONS



Dryer—Valley Forge Chemical and Manufacturing Company, King of Prussia, Pennsylvania



Walls and Ceilings of This Bakery Dough Room and Chamber are Cemesto Applied to Steel Frame

Bakery Dough Room—Solid Partition Walls of 2-in. S2S Cemesto, With Steel Batten Strips Bolted Through to Metal Angles

At Right: Passageway Has Walls of 1-in. S2S Cemesto

Wall Formed by 1-in. S1S Cemesto Between Half-Round Logs, 24 in. o.c.; the Celotex Surface is the Interior Finish

Cemesto Used as Exterior Finish
Architect: Homer Harper, Benton Harbor, Mich.

ADAPTABILITY

THERMAX FIRE-RESISTING STRUCTURAL INSULATION

DIVERSIFIED ADAPTABILITY

THERMAX — DEMONSTRATED PRACTICABILITY—The material now has world-wide distribution. It has been used extensively in continental Europe **since 1918** under the trade name of **Heraklith,** and there has won recognition and ready acceptance in building industry.

This long period of actual demonstration under varied building and climatic conditions from Iceland to tropical Palestine has established the unique and practical characteristics of this insulation. In the United States, Thermax has been made, marketed and used successfully for over seven years.

FRAME BUILDING INSULATION—

(1) As Sheathing and Roof Boarding—The full one (1) inch or two (2) inch thickness of structural Thermax as insulating slabs is an economy. The added fuel savings and comfort more than compensate for any slight added cost. The fire-resisting feature alone should influence its choice. Structurally it is an ideal sheathing and roof boarding material.

As an exterior stucco base it is practically inert so far as contraction and expansion are concerned and the bond between the stucco and the Thermax surface is equal to that of the best masonry stucco base. Two (2) inch Thermax is recommended for stucco base because the effect, using standard brick veneer frames, is the same as in a masonry building with a masonry reveal (see detail, page 41).

(2) As Interior Plaster Base—On walls and ceilings it is an ideal fire-resisting and sound-deadening plaster base—strong bond, no expansion or contraction. On basement ceilings it reduces the fire hazard to a minimum.

(3) As a Light Weight Floor Slab—Where a composition floor (linoleum, asphalt tile, rubber tile, etc. is used, Thermax (3 in. thickness) finished with a topping of Portland cement mortar (1 : 3 mix gauged with approximately 10% of hydrated lime) troweled smooth, provides the structural sub-floor or base for these materials (maximum joist spacing 24 in. o.c.). It is also an ideal base for ceramic and other finishes.

So used, a cement floor in attics is economically practical and materially lessens fire risk.

Beside the benefits of heat insulation, sound deadening is an inherent quality of Thermax.

INDUSTRIAL ROOF DECK INSULATION—Thermax units are high in insulation and sound absorptive values in the three thicknesses marketed—1, 2, and 3 in.—and where required **over wood, concrete or steel roof decks** are laid in one operation in the required thickness—a labor economy. Thermax presents a firm insulating base for built-up roofing. Cement topping is recommended.

FIRE-RESISTING, INSULATING STRUCTURAL ROOF SLABS—Used as **precast roof slabs** in conjunction with steel roof framing, Thermax (2 and 3 in. thick) is easily erected and is a rigid base for built-up finished roofing on industrial buildings. The exposed underside may be painted with aluminum or light reflecting cold water or oil paint, producing an efficient, attractive, and inexpensive acoustical treatment for auditoriums, gymnasiums, armories and other structures where sound quieting is desired. It may also be plastered with gypsum, lime or cement plaster.

FIRE-RESISTING, INSULATING STRUCTURAL FLOOR AND CEILING SLABS—For use as **structural floor slabs** in residential construction in conjunctiion with **Steel Joists** and **Junior Beam** or **Steel Deck Construction.** Light weight, structural strength, definite fireproofing, heat and sound insulation and an ideal base for cement, tile, terrazzo, and similar floor finishes are the salient characteristics.

Used as a 2 in. thick **fire-resisting ceiling slab,** it adds a practical and defnite fire protection to those light steel constructions, hitherto difficult to accomplish. It provides a perfect plaster base or if painted only (unplastered), it is highly sound absorbent.

FIREPROOF PARTITIONS (NON-BEARING)—

(1) 2 in. Thick with Steel Studs—Fulfills 1 hour fireproofing requirements, using 1 in. thick Thermax units clipped between 1-in. steel channels, plastered both sides (2 in. thick finished). These partitions are erected rapidly, dry out quickly, are light in weight and stable.

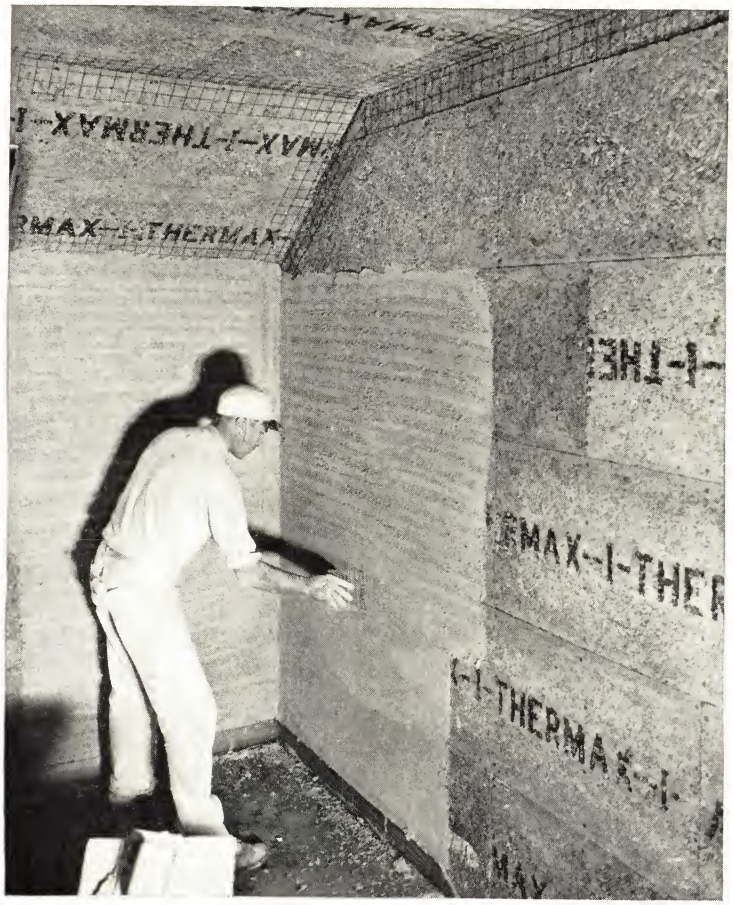
(2) 2 in. and 3 in. Thick Partition Blocks—Fulfills 1 and 2 hour fireproofing requirements, respectively. The Thermax units 2 and 3 in. thick x 20 in. wide x 32, 48 or 64 in. long are easily handled due to their light weight. They are quickly erected with mortar (Portland cement, gypsum or lime) like gypsum or clay tile partition blocks, plastered both sides, finishing 3 in. and 4 in. thick, respectively. Cutting and fitting are easily accomplished with ordinary tools.

THERMAX PLANKS—Thermax slabs 2 and 3 in. and 20 in. wide may be obtained on special order in ceiling height lengths. Easily and rapidly erected with clips and plastered (no studs).

CONCRETE FORMING—Thermax when used in forming of exterior concrete walls, floors, or ceiling provides fire-resisting insulation, is an excellent plaster base or may be left exposed for acoustical treatment.

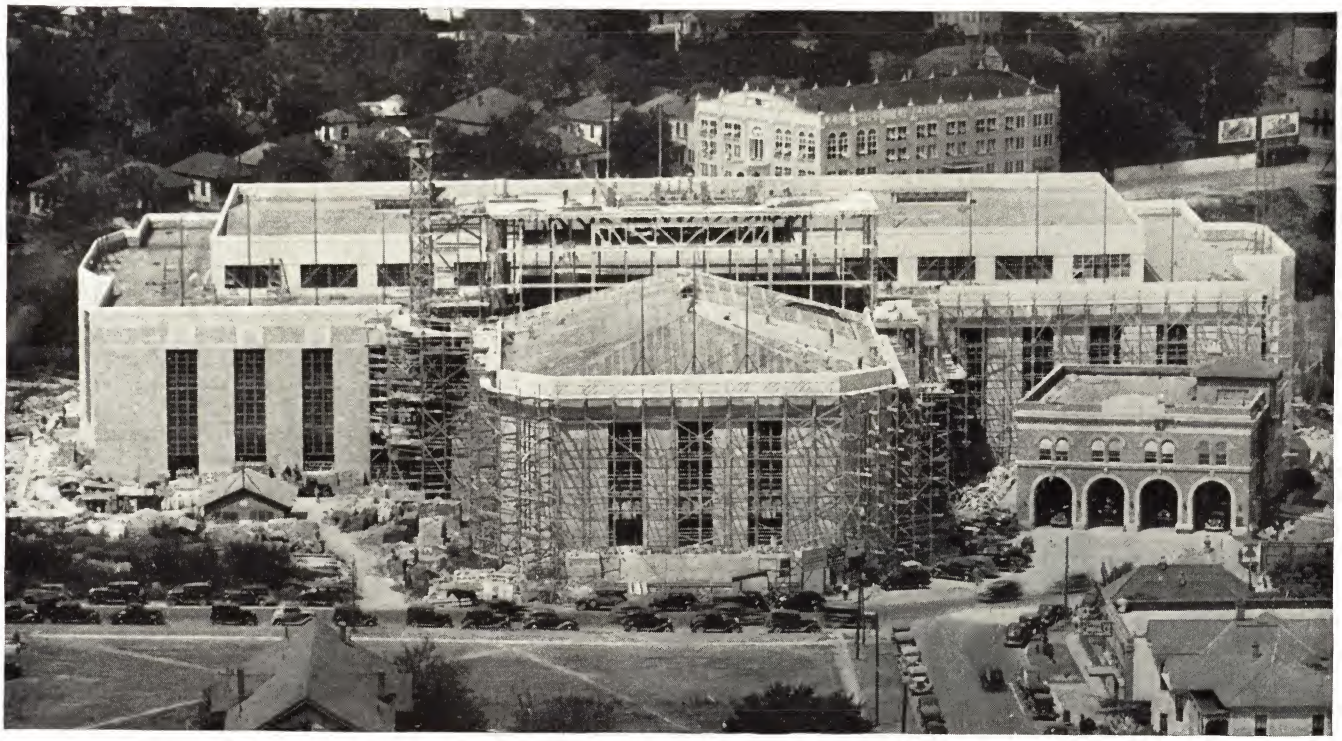
Form bracing recommendations are:

1 in. Thermax with wood forming.
2 in. Thermax with 8 in. spacing of supports.
3 in. Thermax with 12 in. spacing of supports.



20 HOUSES, BONNEVILLE DAM, BONNEVILLE, ORE.
One-Inch Thermax Fire-resisting Insulation
Used as a Plaster Base

HOTEL DARLING, WILMINGTON, DEL.
Thermax Fire-resisting Insulating Slabs
for Floors, Walls, and Ceilings in Fireproof Construction



HOUSTON EXPOSITION BLDG., HOUSTON, TEXAS
Insulated Roof Deck—300,000 Board Feet of 3-in. Thermax Slabs

Features

MANUFACTURING PROCESS

RAW STOCK—Thermax is made by combining two basic materials—long, tough wood shreds which are completely coated with fire resisting cement. The cellular wood fibers alone have an established high insulation value, which is increased by the air containing interstices between the fibers when these are interlaced and cemented together.

DETAILS OF PROCESS—Thermax is produced in one continuous mechanical operation that shreds the timber into long fibers; passes these fibers through a binding emulsion of fire resisting cement; rolls and forms this mass into boards or slabs exactly 1 in., 2 in., and 3 in. thick by 20 in. wide and dries and cuts the product into standard lengths.

PHYSICAL CHARACTERISTICS · ADVANTAGES

TESTS—All data is substantiated by standard tests conducted by recognized authorities: Underwriters' Laboratories, Inc., U. S. Bureau of Standards, Columbia University, Massachusetts Institute of Technology, Pittsburgh Testing Laboratories, Riverbank Laboratories, Inc., etc.

SIZES—

Thicknesses—Thermax is made 1, 2, and 3 in. thick. An axiom of insulation efficiency is that a sufficient thickness of insulation must be used. The outstanding advantage of Thermax as an insulating material is the greater thickness combined with structural strength at lower cost.

Area—Thermax in each thickness is made 20 in. wide x 32, 48, 64, 72 and 96 in. long. Special lengths up to 9'0" can be furnished on request.

WEIGHT—

1-in. Thermax—2.2 lbs. per sq. ft. (approx.).
2-in. Thermax—4.4 lbs. per sq. ft. (approx.).
3-in. Thermax—6.6 lbs. per sq. ft. (approx.).

FIREPROOFING—Thermax Passes Rigid Fire Tests. It has been Rated by Underwriters' Laboratories and Re-examination Service is Maintained.

Thermax blocks laid up with mortar for non-bearing partitions are approved for use in fireproof construction by the Boroughs of the City of New York as well as by the Building Departments of the leading cities in the United States and Europe and are rated without insurance penalty.

Thermax is approved by building departments as fire retardant trim in fireproof construction when left exposed for acoustical treatment.

3-in. Partitions—Thermax 2-in. thick blocks laid up with mortar, plastered each side with ½ in. of plaster, satisfactorily passed the fire endurance and fire hose stream tests at the Underwriters' Laboratories at Chicago and is rated 1 hour incombustible for non-bearing partitions in fireproof construction.

4-in. Partitions—Thermax 3 in. thick blocks laid up with mortar, plastered each side, have passed the 2¼ hour fire endurance and hose stream tests in accordance with the current specifications of the American Society for Testing Materials. (Test conducted by the U. S. Bureau of Standards.)

The 3 in. plastered (4 in. finished) Thermax non-bearing partitions have passed the 1 hour fire endurance and hose stream tests required by the Building Departments of the Boroughs of the City of New York. (Tests conducted by Columbia University.)

2-in. Partitions—1-in. Thermax Slabs, between steel studs 20 in. on center, plastered ½ in. each side, successfully passed the Fire Endurance and Fire Hose Stream Test for non-bearing partitions at the Los Angeles Testing Laboratory, for a one hour rating.

THERMAL CONDUCTIVITY—The thermal conductivity of Thermax Fire-resisting Insulation is slightly higher than other insulation boards and fills. However, Thermax combines in one economical building slab, 1, 2, or 3 inch thick, the desirable qualities of thermal insulation, structural strength, and fire-resistance.

The thermal conductivity of Thermax established by Prof. J. C. Peebles, Armour Institute (flat plate method) is:

1 in.—0.458 B.t.u. per hour, per sq. ft., per degree F.
2 in.—0.229 B.t.u. per hour, per sq. ft., per degree F.
3 in.—0.153 B.t.u. per hour, per sq. ft., per degree F.

SOUND INSULATING PARTITIONS—Thermax partitions when plastered have exceptional value for sound deadening or sound isolation purposes.

MOISTURE RESISTANCE (CAPILLARY)—With one edge immersed in water, moisture in four (4) days rises to an average of but 3 in. in the slab. No further rise occurs for the next six (6) days. After drying, Thermax has the same strength as it had originally (University of Washington test). Non-absorption not only is essential to sanitation but to insulating efficiency.

STRUCTURAL STRENGTH — Independent laboratory tests determine that Thermax fulfills all practical requirements for roof decks.

Slabs placed on flat supports spaced 24 in. or 16 in. o.c. and a central load applied over 1 in. x 3 in. plate in increments up to ultimate failure, deflections being measured and corresponding loads recorded.

The results of these tests showed that the average ultimate load per sq. ft. for 3 in. Thermax at 24 in. span between supports is 345 lbs., and for 2 in. Thermax at 16 in. span is 500 lbs. per sq. ft. (for complete table of tests, see page 55).

Impact—A 1 in. topping of Portland cement mortar was applied on top of 2 in. thick Thermax blocks. Samples were kept moist for one week, then thoroughly dried. The concrete topping was then subjected to 20,000 blows of 600 lbs. per sq. in. concentrated at one point. There was no cracking of the concrete topping or loosening of the bond between the concrete and Thermax slab (University of Washington).

FIRM ROOF FOUNDATION—Where used as structural roof slabs or as insulation over roof decks, Thermax provides a firm surface as foundation for the application of built-up finished roofing. There is no danger of puncturing the finished roofing material under normal wear and tear.

EXPANSION AND CONTRACTION — In Europe, Thermax (under the name of Heraklith) has been in use extensively for over eighteen years as an exterior stucco and interior plaster base. Installations here and abroad show no defects due to expansion or contraction of the base under the various climatic conditions encountered.

PORTLAND CEMENT STUCCO AND PLASTER BOND—(Test conducted by Columbia University.) Sample Thermax Boards 1 in. thick, selected at random from stock, were securely attached to wood blocks furnished with exposed pull rings. The Thermax surfaces of each specimen, thus prepared, were bonded together with standard gypsum plaster. A series of six tests were made on slabs thus bonded resulting in an average of 317 lbs. per sq. ft. Failure in each case occurred by separation in the wood fibers. See also impact test above.

> **NOTE**: *60 lbs. per sq. ft. is the accepted standard for bonding strength for gypsum plaster and 200 lbs. per sq. ft. for portland cement, poured in place (U. S. Government Specification).*

STERILITY—Made of clean, shredded wood, with each strand coated with high temperature cement Thermax is odorless and affords no food value to attract insects. The cement coating successfully prevents attack by rodents.

TERMITE PROOF — Thermax (under the name Heraklith) has been used under close observation for many years in tropical Europe in regions infested by the white ant or termite. No instance of termite damage has ever been discovered. The hard, refractory cement coating of every wood shred apparently resists termite attack.

CHEMICAL ANALYSIS — Assurance that there is no detrimental corrosive effect when Thermax is erected in contact with steel is given in the following chemical analysis showing negligible magnesium chloride. (Test by Penniman and Browne, Consulting Chemists, Baltimore.)

The water soluble content of Thermax is but 4.39% of the total weight which consists largely of alkaline material. The chemical arrangement is as follows:

Magnesium sulphate	92.71%
Magnesium chloride	1.48%
Calcium hydrate	5.80%

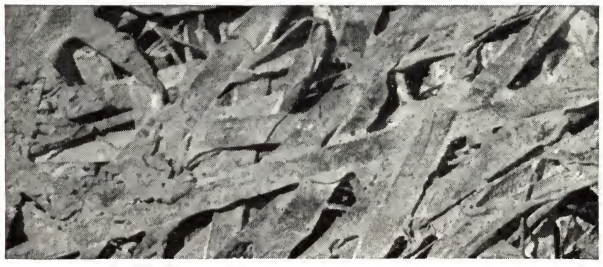
DURABILITY—FUNGI PROOF—In addition to being moisture resistant, the cement coated wood shreds in Thermax are definitely sealed against attack by fungus growth. Under actual use abroad for many years no instance of deterioration has been discovered. (Vienna Technical Society report.)

Dry Rot tests conducted in U. S. by University of Idaho (Forestry Dept.) give Thermax a 100% rating against fungus.

UNIFORMITY—Uniformity of raw materials, complete laboratory control and rigid factory supervision plus Re-examination Service by the Underwriters' Laboratories assure a uniform product.

REASONABLE COST — Compared with other insulation of equal thickness or efficiency, but lacking the fire-resisting and structural characteristics of Thermax, the cost of Thermax is low.

LOW LABOR INSTALLATION COST—Thermax is easily and rapidly erected by the ordinary mechanic. It saws like lumber where fitting is required. The light weight of the units makes one man handling convenient and the large boards or slabs with a surface area of approximately 1 sq. yd. combines speed with economy.



A FULL SIZE SECTION OF THERMAX

SPECIFICATION No. 11
SHEATHING AND ROOF BOARDING

Use on Walls Under Wood Siding, Shingles, Stucco or Masonry Veneer
Use on Sloping Roofs Under Shingles, Slate, Tile or Similar Rigid Roof Units Which May Be Laid Over Wood Furring Strips

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the wall and roof areas to be covered. If both 1 in. and 2 in. thicknesses are used, list separately and the respective locations or areas covered.*

(2) MATERIAL

[Sheathing] [and] [roof boarding] shall be Thermax Insulating Board as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Boards shall be full **[1 in.] [and] [2 in.]** thick **[as above designated]**, 20 in. wide by 64 in. long.

(3) APPLICATION

(3a) GENERAL—Continuity of insulation is imperative. Apply Thermax boards with the length at right angles to the framing members. End joints (except at corners, openings, etc.) shall center over framing members. Break end joints in alternate courses.

JOHN C. VEATCH RESIDENCE, PORTLAND, OREGON
Architect—Richard Sundeleaf
Thermax Used for Interior Plaster Base and Insulation

(3b) SPACING—Thermax boards shall be brought to moderate contact at all joints and intersections and with window and door frames and trim **[and with gables and parapet walls.]** Do not force Thermax into place.

(3c) NAILS—

(3c1) Use 8d common **[cement coated]** nails with 1 in. galvanized roofing washers or 8d large headed foundry nails for 1 in. Thermax.

(3c2) Use 16d common **[cement coated]** nails with 1 in. galvanized roofing washers or 16d large headed foundry nails for 2 in. Thermax.

(3d) NAILING—First nail Thermax to intermediate framing members and then nail the ends on all framing members spaced three (3) nails, approximately 9 in. apart. On ends four (4) nails shall be used nailed approximately ⅝ in. in from the edge.

(4) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions.*

(4a) CONSTRUCTION—Framing shall be in accordance with the recommendations of the U. S. Department of Commerce and the National Lumber Manufacturers' Association.

(4b) WATERPROOF PAPER—Cover all exterior Thermax surfaces **[except those under stucco]** with **[specify brand]** waterproof building paper. Lap at least 2 in. at all joints and secure, through the insulation to framing members with nails driven through galvanized washers.

(4c) FURRING STRIPS—

(4c1) Provide 1x3 in. furring strips properly spaced over Thermax to take **[wood siding] [shingles] [slate] [tile] [specify] [wall] [and] [roof]** covering. Strips shall be laid **[directly over and parallel with the framing members for wood siding] [and] [at right angles to the framing members for shingles, etc.]** and nailed to each bearing.

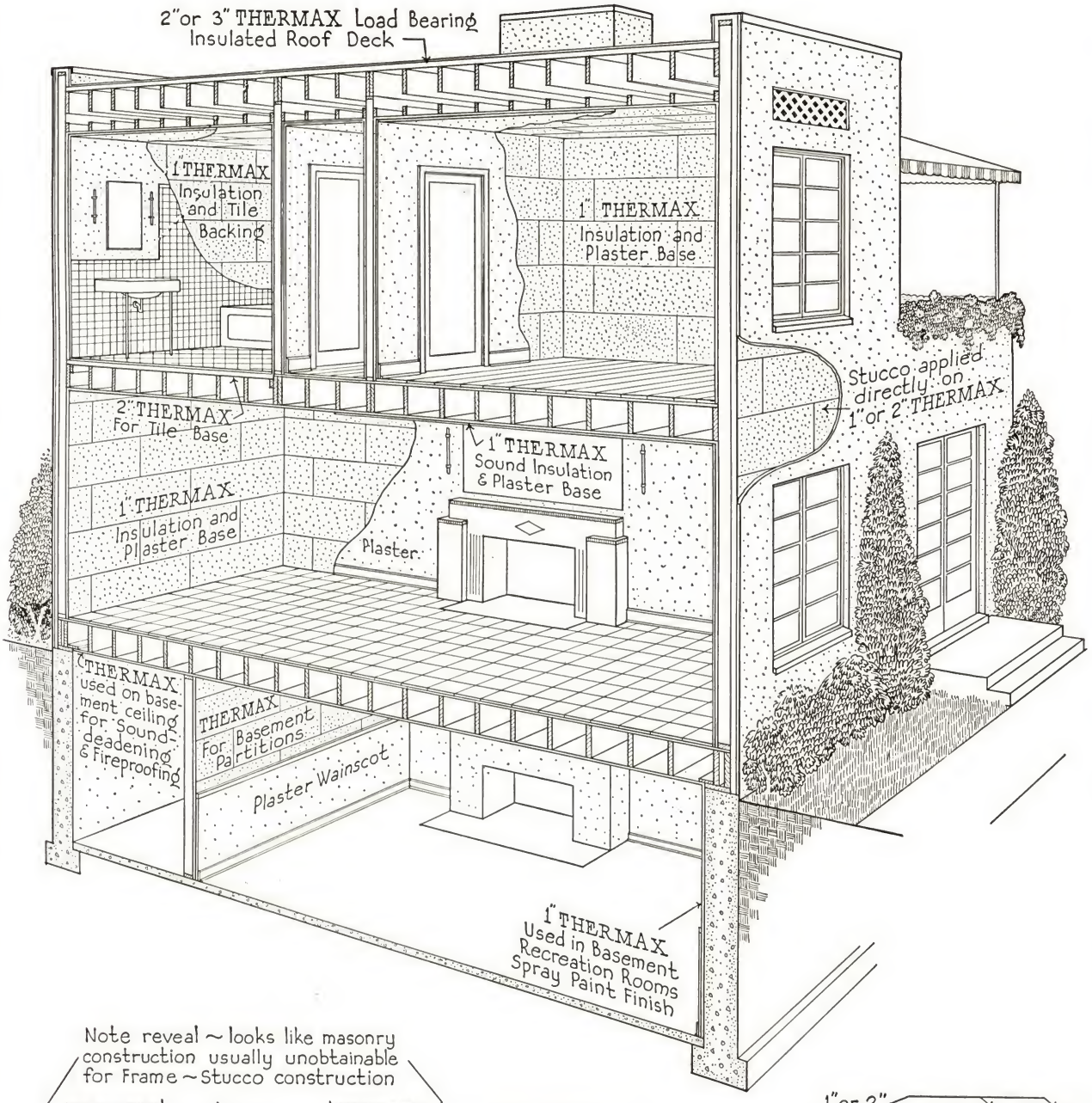
(4c2) Furring nails shall be sufficiently long to pass through the furring and Thermax to penetrate the framing members at least 1 in.

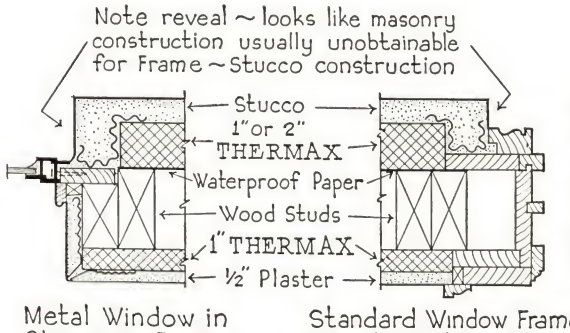
(4d) WOOD SIDING—All joints shall butt over the center of a furring strip.

(4e) MASONRY VENEER TIES—Provide **[specify type]** galvanized masonry ties at each stud spaced approximately 16 in. apart vertically. Nails shall be sufficiently long to pass through the Thermax and penetrate the stud at least 1 in.

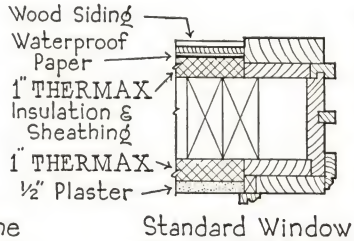
(4f) EXTERIOR STUCCO—Apply the exterior stucco approximately 1 in. thick directly to the Thermax in accordance with the manufacturer's standard specification for application over masonry base. Do not wet the Thermax surface before applying the stucco.

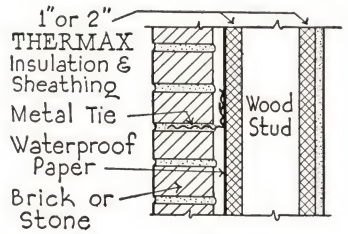
THERMAX IN RESIDENTIAL CONSTRUCTION





Metal Window in Stucco on Frame Building





SPECIFICATION No. 12
INTERIOR PLASTER BASE

USE AS AN INSULATING PLASTER BASE

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the wall and ceiling areas to be covered. If both 1 in. and 2 in. thicknesses are used, list separately and the respective locations or areas covered.*

(2) MATERIAL

Plaster base shall be Thermax Insulating Board as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Units shall be full **[1 in.] [and] [2 in.]** thick **[as above designated],** 20 in. wide by 64 in. long.

(3) APPLICATION ON FRAME CONSTRUCTION

(3a) GENERAL—Apply Thermax boards with length at right angles to the framing members. End joints shall center over framing members. Stagger end joints in successive courses on all walls and ceilings; likewise stagger end joints at juncture of walls and ceilings.

(3b) SPACING—Thermax Board Units shall be brought to moderate contact at all joints and with window and door frames. Do not force Thermax into place.

(3c) NAILS—

(3c1) Use 8d common **[cement coated]** nails with 1 in. galvanized roofing washers or 8d large headed foundry nails for 1 in. Thermax units.

(3c2) Use 16d common **[cement coated]** nails with 1 in. galvanized roofing washers or 16d large headed foundry nails for 2 in. Thermax units.

(3d) NAILING—Space three (3) nails approximately 9 in. apart on centers on each bearing and four (4) nails approximately ⅝ in. in from the edges at ends. First nail to intermediate framing members and then at ends.

(4) APPLICATION ON MASONRY WALLS

(4a) GENERAL—Nail Thermax to wood furring strips (spaced 16 in. o.c. for 1 in. Thermax—32 in. o.c. for 2 in.) or apply Thermax Boards to the masonry with **[Emulsified Asphalt] [½ in. thick backing of waterproofing Portland cement mortar].** Stagger end joints in successive courses.

NOTE: *Emulsified Asphalt is advocated since this not only thoroughly bonds the Thermax to the masonry, but also seals the masonry against air infiltration or moisture due to capillarity.*

(4b BACKING—

NOTE: *Select either (4b1) or (4b2) backing as best adapted.*

(4b1) Asphalt—Apply a heavy coat of high grade emulsified asphalt in which clay is used as the emulsifying agent and containing not less than 60% of asphalt **[specify]** approximately ⅛ in. thick **[sprayed] [trowled]** onto the thoroughly cleaned masonry wall.

(4b2) Cement Mortar—Apply a ½ in. thick backing of fresh Portland cement mortar (1 to 2 mix gauged with approximately 10% of hydrated lime) to the thoroughly cleaned masonry wall.

(4c) ERECTING THERMAX—Apply the Thermax Boards against the backing while plastic with sufficient pressure to assure a thorough bond. Units shall be set in moderate contact, with exposed faces in a true vertical plane. Do not force Thermax into place. Cut and fit Thermax tight against all wood grounds attached to masonry (see 5b2).

(5) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions.*

(5a) CONSTRUCTION—Framing shall be in accordance with the recommendations of the U. S. Department of Commerce and the National Lumber Manufacturers' Association.

(5b) GROUNDS—

(5b1) For Frame Construction—Furnish and erect, substantially secured to framing members through the Thermax, ½ in. grounds to receive all woodwork trim.

(5b2) For Un-Furred Masonry Construction—Furnish and erect, substantially secured to the masonry, grounds the thickness of the insulation to which, after the insulation has been erected, shall be secured ½ in. grounds to receive all woodwork trim.

(5b3) For Furred Masonry Construction—Furnish and erect, substantially secured to furring strips through the Thermax, ½ in. grounds to receive all woodwork trim.

(5c) PLASTERING—

(5c1) Caution—Do not wet Thermax before applying plaster.

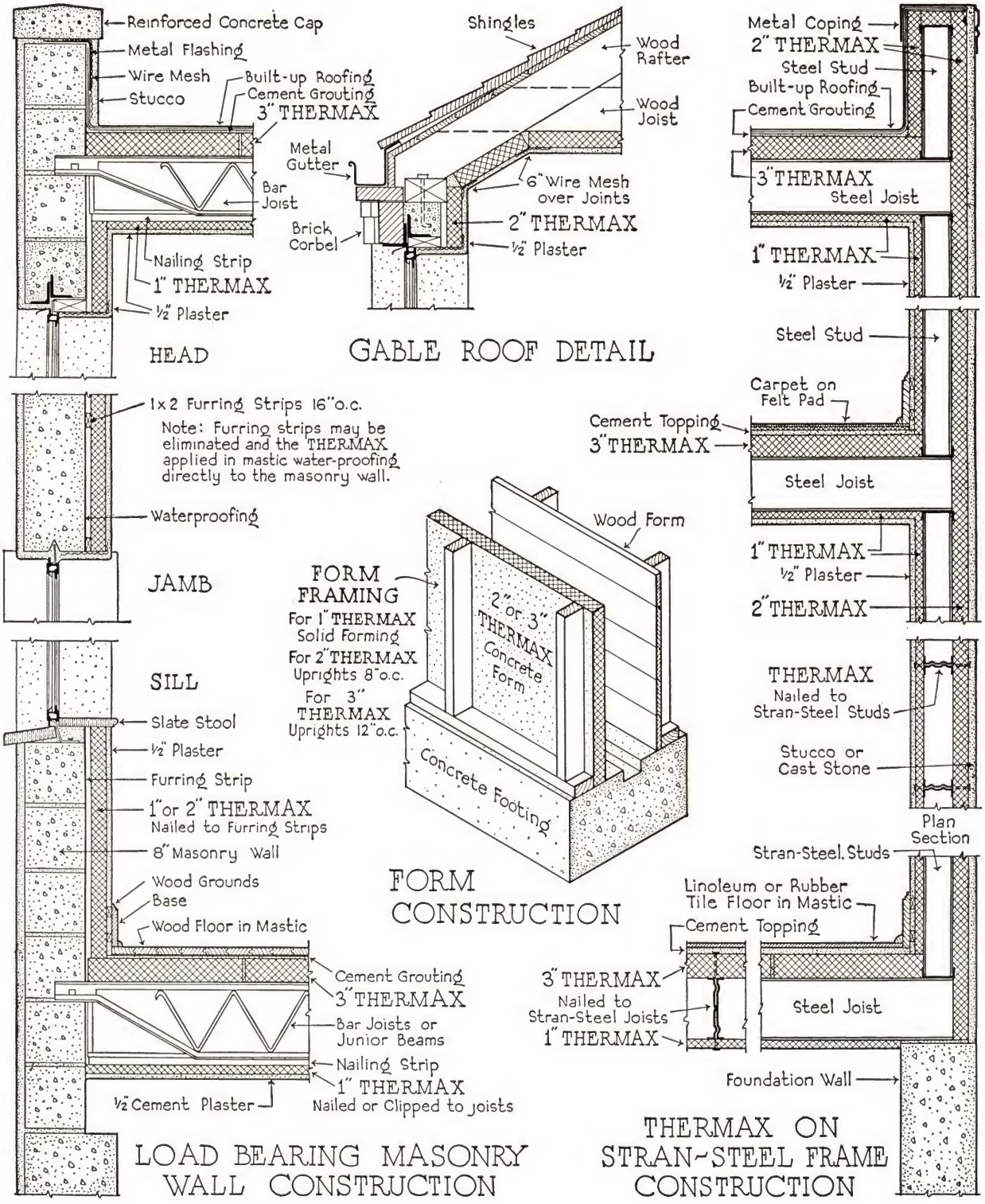
(5c2) Plaster—Use gypsum cement, gypsum wood fiber or lime plasters for scratch and brown coat.

(5c3) Thickness—Full ½ in. thick.

(5c4) Application—Apply plaster in three (3) coats (scratch, brown and finish) in accordance with the plaster manufacturer's specifications. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary and particularly on ceilings, provide plaster screeds to insure a uniform full plaster thickness.

(5c5) Ventilation—Provide adequate ventilation for the proper drying and curing of the plaster work.

FIRE-SAFE—INSULATED—VERMIN-PROOF



SPECIFICATION No. 13
PARTITION AND FURRING SLABS

USE FOR FIREPROOF CONSTRUCTION INCLUDING COLUMN COVERING

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

All partitions **[and] [all furring for exterior masonry walls] [and] [all column covering]** shall be built of Thermax.

NOTE: *If there are any exceptions, so note. List and locate any special requirements if not clearly indicated on plans and details.*

NOTE: *Thermax partitions, etc., requiring no plaster may be finished with plastic or other high grade paint. Thermax has excellent acoustical absorption qualities and is pleasing in appearance when the blocks are symmetrically disposed and carefully laid. The surface is not fragile. If required, list separately here.*

(2) PRELIMINARY PROVISIONS

(2a) All rough bucks for openings will be provided and accurately set by others.

(2b) All wood nailing blocks to receive grounds, etc., will be provided and attached to Thermax blocks by others.

(3) MATERIALS

(3a) GENERAL—All Thermax Blocks shall be as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois.

(3b) PARTITION BLOCKS—Thermax, 2 or 3 in. thicknesses, as indicated on plans, 20 in. wide x 32, 48 or 64 in. long.

NOTE: *Use 2 or 3 in. for partitions up to 10 ft. in height. Use 3 in. Thermax for partitions over 10 ft. in height.*

(3c) FURRING BLOCK—Thermax **[2 in.] [3 in.]** thick, 20 in. wide x 32, 48 or 64 in. long.

(3d) COLUMN COVERING—Thermax **[2 in.] [3 in.]** thick, 20 in. wide x 32, 48 or 64 in. long.

(3e) MORTAR—Portland cement, gypsum or lime mortar fulfilling requirements of the standard A. S. T. M. Specifications. Sand shall be clean and free from organic matter with grains graded from fine to coarse. Mortar shall be mixed in the proportion of one (1) part of cement to three (3) parts of sand.

(3f) EMULSIFIED ASPHALT—Emulsified asphalt for setting exterior masonry wall furring shall be of high grade in which clay is used as the emulsifying agent and containing not less than 60% of asphalt **[specify]**.

(4) ERECTION

(4a) GENERAL—All blocks **[except furring set with asphalt]** shall be laid in Portland cement, gypsum or lime mortar with full, flush joints to a line, with horizontal beds uniformly level on each course. All joints, chinks and crevices between the tile and other work shall be filled with mortar well slushed in. Joints in alternate courses shall be broken.

All blocks shall be started on the fireproof floor, set plumb straight and true, and wedged at ceiling and slushed with mortar. Tile at corners and re-entrant angles shall be laid interlocked in alternate courses. Cut blocks into 16 in. lengths where end nailing blocks for grounds are necessary.

All joints of unplastered blocks shall be neatly pointed smooth as the work progresses.

(4b) PARTITIONS—All partitions coming in contact with existing walls shall be rigidly anchored **[by driving 10d spikes into the mortar joints of the wall at the joints of each partition tile course] [by building in at each partition tile course metal ties provided and built into the masonry by others] [specify].**

(4c) FURRING—Furring shall be laid **[against] [or] [free from]** the walls as shown on the plans and details.

(4c1) Apply a heavy coat of emulsified asphalt approximately ⅛ in. thick **[sprayed] [troweled]** on to the thoroughly cleaned masonry wall. Apply the Thermax blocks while asphalt is plastic **[without mortar joints]** against this backing with sufficient pressure to assure a thorough bond. Units shall be set in moderate contact with exposed faces in a true vertical plane. Do not force Thermax into place.

NOTE: *This method is advocated since it not only firmly bonds the Thermax to the masonry, but also seals the masonry against air infiltration or moisture due to capillarity.*

(4c2) Rigidlly anchor the free standing furring tile to the masonry wall approximately every square yard of face area **[by 10d spikes driven into the mortar joints of the wall at the course joints of the furring tile] [by building in at the furring tile course metal ties provided and built into the masonry by others] [specify].**

NOTE: *Use for free standing furring. Dampproofing of wall back of furring is advocated.*

NOTE: *See also par. 4, page 42, under "Thermax as Interior Plaster Base."*

(4d) COLUMN COVERING—A single thickness of block shall be laid against the outside edges of the steel **[and the space between the tile and steel shall be solidly backfilled with pieces of Thermax blocks and mortar].**

NOTE: *Include or omit clause covering backfilling as required by local ordinance.*

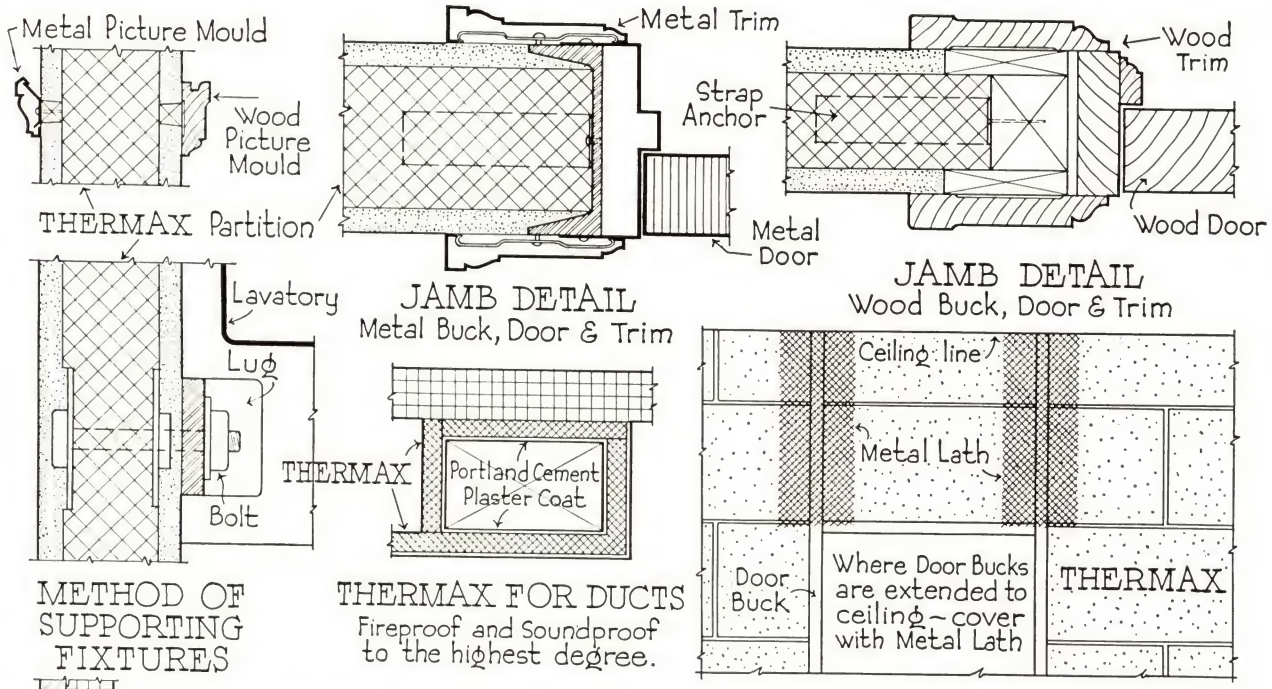
(4e) BUCK ANCHORS—Anchor all wood bucks to block by 10d cut nails driven into the buck at each block course or with other approved metal anchor.

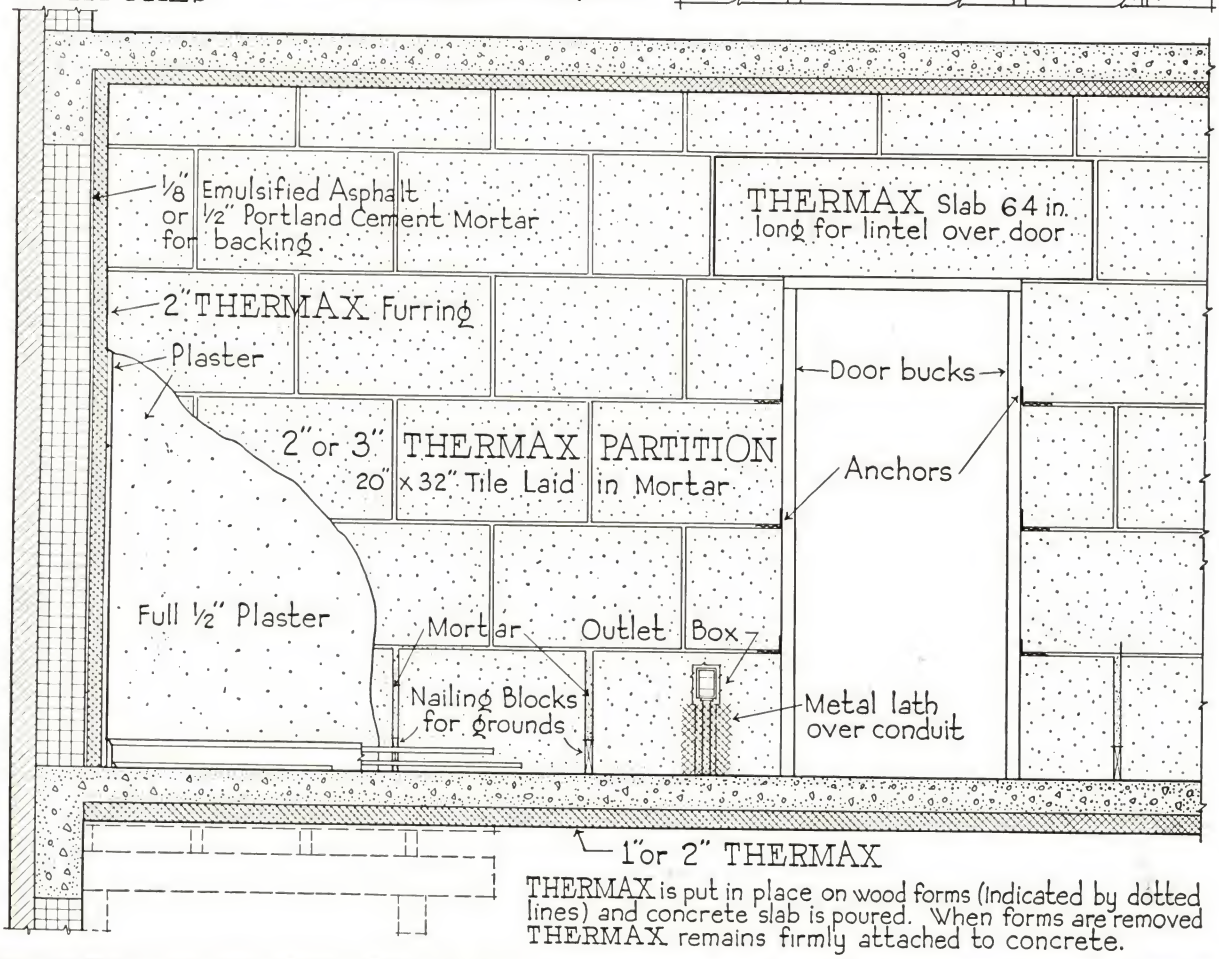
(4f) LINTELS—Lintels shall have at least 4 in. bearing at each end on the block beneath. Lintels over openings more than 4 ft. 8 in. wide shall be provided with steel lintel furnished by others.

Cover all end joints of lintels with expanded metal lath strips 8 in. wide, tacked to blocks with large head nails or staples.

PARTITION AND FURRING SLABS

FIREPROOF—LIGHT WEIGHT—SOUND INSULATING





THERMAX is put in place on wood forms (indicated by dotted lines) and concrete slab is poured. When forms are removed THERMAX remains firmly attached to concrete.

SPECIFICATION No. 14
2 INCH THICK STEEL STUD AND THERMAX PARTITION
USE FOR FIREPROOF CONSTRUCTION

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

All partitions **[so indicated]** shall be 2 in. thick (finish) metal stud and Thermax construction.

(2) PRELIMINARY PROVISIONS

All rough bucks for openings and ½ in. thick plaster grounds will be provided and set by others.

(3) MATERIALS

(3a) THERMAX—1 in. thick, 20 in. wide x 64 in. Thermax as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois.

(3b) STEEL STUDS—Standard 1 in. steel channels, preferably hot rolled, weighing not less than 700 lbs. per M lin. ft.

(3c) CLIPS—Clips for attaching Thermax to steel studs shall be Thermax Clips of 14 ga. spring steel wire.

(4) ERECTION

(4a) Drill holes aligned in a vertical plane in floor and ceiling at least ¾ in. deep, 20½ in. o. c. Cut studs slightly long and spring into the holes.

(4b) Securely anchor a 1 in. channel runner at floor and ceiling with lag screws or toggle bolts. Align channel runners in a vertical plane. Bend 4 in. shoe on top and bottom of each vertical stud. Erect studs 20½ in. o. c. and securely wire studs to runners.

(4c) Securely anchor 1 in. channel runners at floor and ceiling with lag screws or toggle bolts. Align channel runners in a vertical plane. Studs shall be cut to length, spaced 20½ in. o. c., and spliced by bending separate shoes of a narrower channel or bar and wiring these to studs and runners.

NOTE: *(4a), (4b), (4c) above are optional methods.*

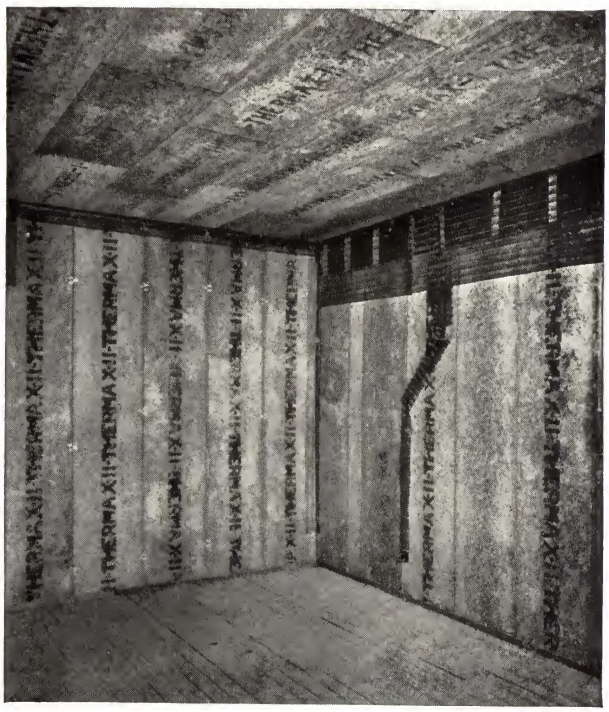
(4d) The first stud shall be erected against a structural wall and substantially secured. Attach to this stud Thermax Clips spaced approximately 12 in. apart o. c., loops outward.

(4e) In the first panel set in 1 in. thick Thermax Slabs, end to end from floor to ceiling inserting the edge next the wall stud in the clip loops. Secure the edges of slabs next to the second stud with Thermax Clips with loops outward. Erect subsequent Thermax panels in similar manner.

(4f) Place a stud at all opening bucks extending from floor to ceiling and secure to buck.

(4g) Accurately fit Thermax Slabs at ceilings, openings, etc., and around conduits, outlet boxes, etc. Where necessary, form pipe and conduit space with studs. Cover all pipe spaces, conduits, etc., with metal lath strips tacked to Thermax.

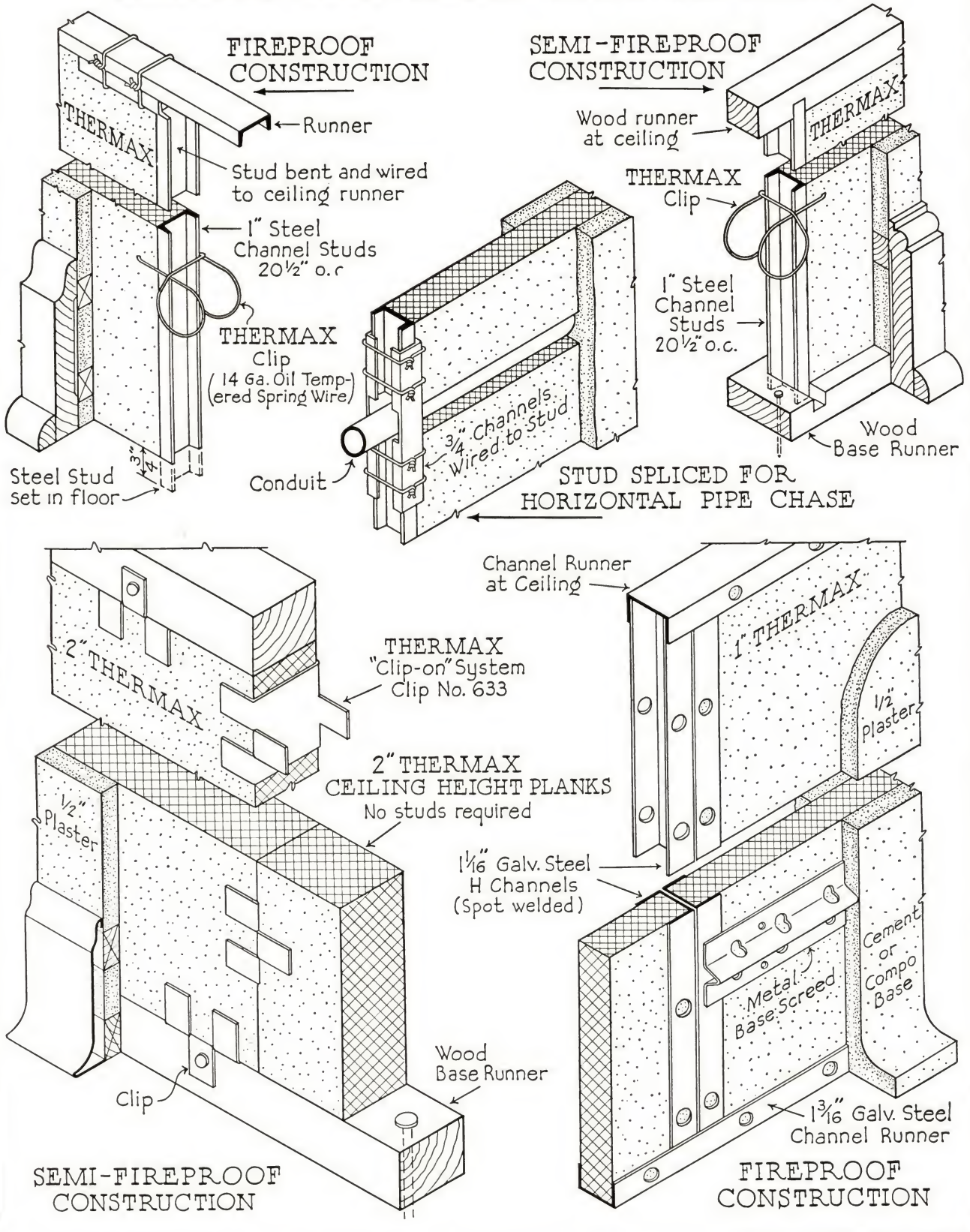
2 In. Thick Steel Stud and Thermax Partition Ready for Plaster—Rapidly Erected and Economical in Cost



2 In. Thick Thermax Plank Partitions 9 and 8 Ft. High—No Studs Required—Note Provision for Conduit

STEEL STUD PARTITIONS

FIREPROOF—LIGHT WEIGHT—SOUND INSULATING



SPECIFICATION No. 15
HOLLOW PARTITION CONSTRUCTION
USE FOR FIREPROOF CONSTRUCTION

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

All partitions so indicated on the plans and details shall be built of Thermax Hollow Construction.

NOTE: *If there are any exceptions, so note. List and locate any special requirements if not clearly indicated on plans and details.*

(2) PRELIMINARY AND SUPPLEMENTARY PROVISIONS

(2a) All rough bucks for openings will be provided and accurately set by others.

(2b) All wood nailing strips will be provided and accurately set by others. They shall be sized to the clear interior space detailed and rigidly secured to the floors, ceilings, and walls in a manner best adapted to the particular construction.

NOTE: *On wood construction strips may be nailed to the rough flooring or framing member—cement coated nails preferred. On concrete construction sleeper clips cast in the concrete are preferable to cement nails. Rawl plugs are excellent for attaching strips to masonry walls. See also Note under (3b).*

(2c) Plaster grounds for full ½ in. plaster shall be provided and attached by others. Grounds shall be nailed to Thermax with nails driven at an angle.

NOTE: *For plastering, see (5c) page 42, under heading "Thermax As Interior Plaster Base."*

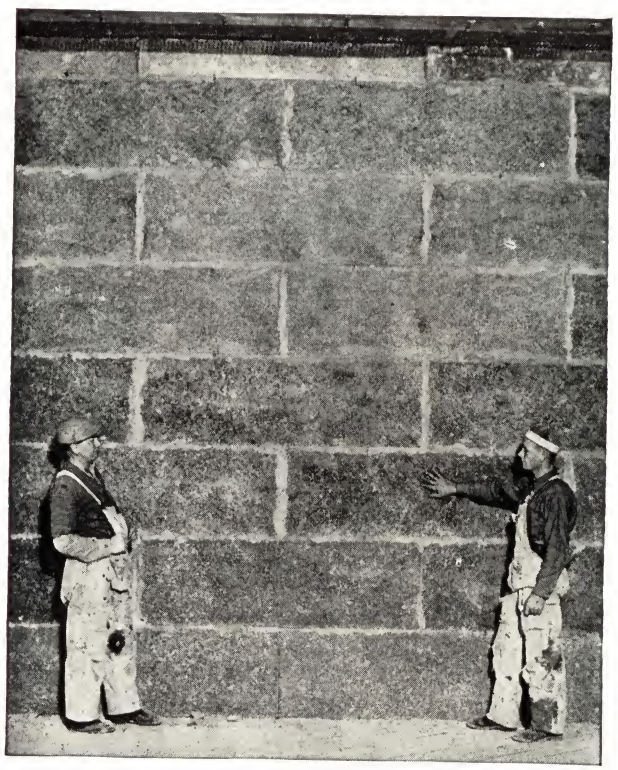
(3) MATERIALS

(3a) THERMAX—1 in. thick, 20 in. wide x 64 in. Thermax as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois.

(3b) SPREADER CLIPS—Spreader clips shall be made of not less than 16 gauge **[galvanized] [specify rustproofing]** steel ½ or ¾ in. wide formed as detailed to support and seat the Thermax slabs and separate them to the required distance. Halves of clips shall be accurately spot welded together.

NOTE: *Where desired half clips may be spot welded to cold rolled channels and these secured to floors, walls, door bucks, and ceilings in lieu of wood nailing strips. Clips shall be accurately spaced to rigidly support the Thermax slabs in the same general manner as detailed. If required, so specify and detail.*

(3c) MORTAR—Portland cement mortar (gauged with hydrated lime) fulfilling requirements of the standard A. S. T. M. Specifications. Sand shall be clean and sharp, free from organic matter with grains graded from fine to coarse. Mortar shall be mixed in the proportion of one (1) part of Portland cement to three (3) parts of sand, gauged with approximately 10% of hydrated lime.



NINTH STREET SCHOOL, LOS ANGELES
Thermax Fire-resisting Partitions—12′ 6″ High

(4) ERECTION

(4a) All blocks shall be laid in cement mortar (gauged with lime) with full, flush joints with horizontal beds uniformly level on each course. All joints, chinks, and crevices between the slabs and other work shall be filled with mortar well slushed in. Joints in alternate courses shall be broken.

(4b) All slabs in alternate courses shall break vertical joints with those below.

(4c) Starting at the floor, bed the first course of slabs in mortar and nail them to nailing strips at floors, walls, and opening bucks. Nails shall be 8d common **[cement coated]** nails with 1 in. galvanized roofing washers or 8d large headed foundry nails. Place the spreader clips at top, four (4) to the slab, one at each end close to the end joint and two at the center so spaced as to secure the ends of the next laid course.

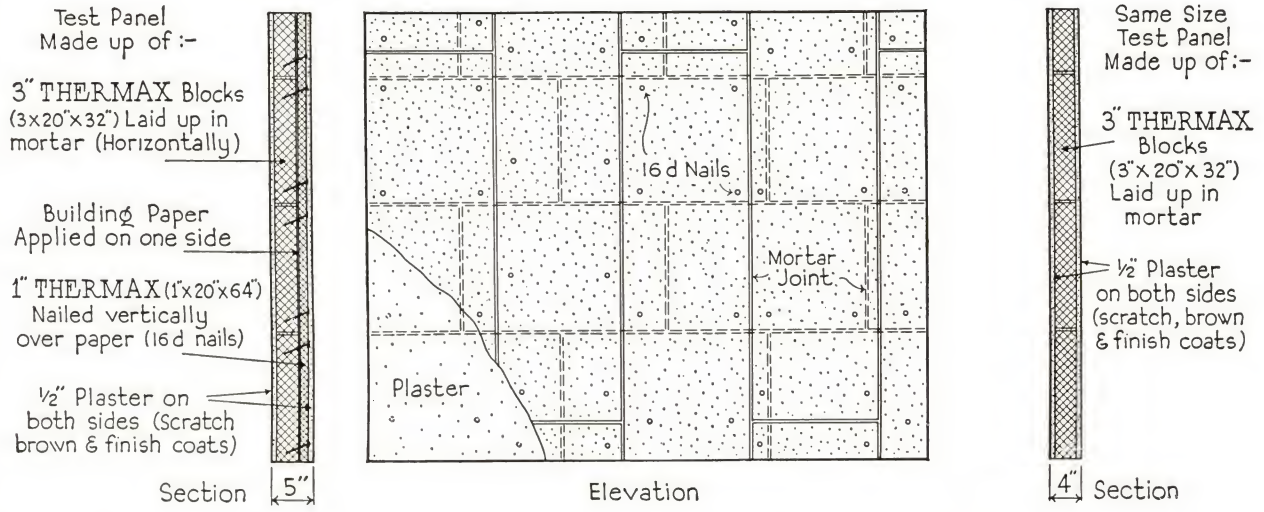
(4d) Subsequent courses shall be laid in similar manner.

(4e) Accurately fit Thermax Slabs at ceilings, openings, etc., and around conduits, outlet boxes, etc. Nail top of ceiling slabs to ceiling nailing strip.

SOUND PROOF PARTITIONS

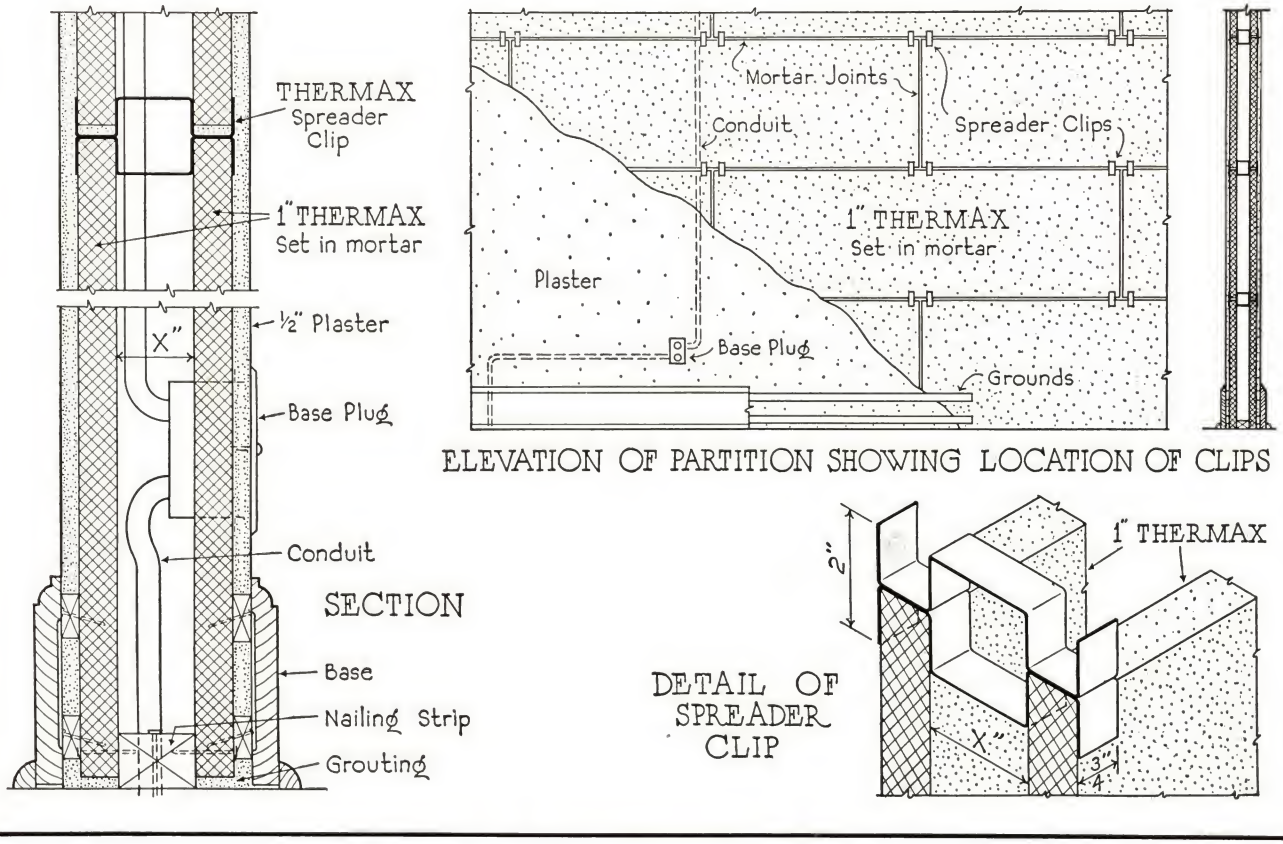
5" OVERALL THICKNESS
Sound Transmission Test, Bureau of Standards, July 19, 1934
SOUND TRANSMISSION LOSS IN DECIBELS 47.4

4" OVERALL THICKNESS
Bureau of Standards Test, June 7, 1934
LOSS IN DECIBELS 35.0



HOLLOW PARTITION CONSTRUCTION

EARTHQUAKE RESISTING



SPECIFICATION No. 16
INSULATING STRUCTURAL FLOOR AND CEILING SLABS

USE FOR FIREPROOF CONSTRUCTION IN CONJUNCTION WITH STEEL JOISTS AND JUNIOR BEAM CONSTRUCTIONS

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the floor and ceiling areas to be covered. If more than one thickness is used, list separately and the respective locations or areas covered.*

(2) CONSTRUCTION

The **[floors] [and] [ceilings]** are constructed **[by others] [specify]** of **[specify type of joist]** spaced **[specify]** as noted on plans.

NOTE: *Maximum joist spacing, 24 in. o. c.*

(3) MATERIALS

(3a) SLAB MATERIAL—[Floor] [and] [ceiling] slabs shall be Thermax as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois.

(3b) FLOOR SLABS—Floor slabs shall be 3 in. thick x 20 in. wide x 48, 64 or 72 in. long.

FRENCH HOSPITAL, NEW YORK CITY

Two-Inch Thermax Suspended Ceiling for Plaster Base, Insulation, and Sound-Proofing

(3c) CEILING SLABS—Ceiling slabs shall be **[1in.] [2 in.]** thick x 20 in. wide x 48 or 64 in. long.

NOTE: *Select thickness with regard to fireproofing required by local ordinances.*

(3d) FLOOR SLAB ATTACHMENT—Special Thermax galvanized clips adapted to fit the top flange of the steel construction or nail Thermax directly to Nailer Joists.

(3e) CEILING SLAB ATTACHMENT—Special Thermax galvanized clips or nail Thermax directly to Nailer Joists.

(4) LAYING THE FLOOR SLABS

Thermax Floor Slabs shall be laid at right angles to the joists and fastened by Thermax Clips. Clips shall be secured in place with galvanized nails driven into the Thermax. Ends of units shall rest on joists with the joint between adjacent slabs centered over the flange. Thermax slabs shall be brought to moderate contact. Do not force Thermax into place. Break end joints in alternate rows. Grout all joints with Portland cement mortar (1:3 mix gauged with approximately 10% of hydrated lime) or nail Thermax directly to Nailer Joists.

NOTE: *Specify elsewhere the finish to be applied over the structural slabs. Use cement mortar (1:3 mix gauged with approximately 10% of hydrated lime) for cement finish. Terrazzo finish 1½ in. thick may be applied directly over the slab.*

(5) ERECTING SLABS, SUSPENDED CEILING CONSTRUCTION

(5a) RUNNER CHANNELS—[Specify Construction, Spacing and Suspension].

(5b) CROSS-FURRING—Apply cross-furring at right angles to the **[runner channels] [joists]**, 16 in. o. c. substantially secured to the flange.

(5c) Ceiling slabs shall be erected at right angles to the cross-furring. Thermax slabs shall be brought to moderate contact. Do not force Thermax into place. Break end joints in alternate rows centering these over the center of the cross-furring member.

Slabs shall be secured to the cross-furring in accordance with the Standard Thermax Suspended Ceiling Detail with **[concealed] [exposed]** channel clips hung over each cross-furring member. Midway between each channel clip on the long edges of the slabs install a **[concealed] [exposed]** separator clip. Install (2) **[concealed] [exposed]** separator clips at all slab end butt joints.

NOTE: *Slabs may be plastered with gypsum or lime plaster in accordance with the plaster manufacturer's standard specifications. Slabs may be left exposed for interior finish.*

SPECIFICATION No. 17
INSULATION OVER ROOF DECKS

USE OVER WOOD, CONCRETE AND STEEL AND SIMILAR ROOF DECKS

NOTE: *For details, see page 53.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the roof areas to be covered. If more than one thickness is used, list separately and the respective locations or areas covered.*

(2) MATERIAL

Roof insulation shall be Thermax as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Insulation shall be **[1 in.] [2 in.] [3 in.]** thick boards, 20 in. wide x 48 or 64 in. long.

(3) APPLICATION—GENERAL

(3a) CONDITION OF DECK—Deck shall be smooth, dry and swept clean.

(3b) GENERAL—Thermax shall be dry when applied. Lay only as much insulation as can be covered and protected by the finished roof covering in a single day. Where work is stopped, protect the edges of insulation with overlapping mopped strips of roofing felt, leaving the felt strips as a permanent seal. Apply Thermax units with edges in moderate contact. Cut units to fit snugly against all parapets or similar vertical surfaces. Do not force Thermax into place. Break joints between alternate rows.

Seal off at least each 30x30 ft. area (900 sq. ft.) with overlapping mopped strips of roofing felt on all edges.

Grout all joints with Portland cement mortar (1:3 mix, gauged with approximately 10% of hydrated lime) and brush a skim coat of thick consistency over the entire surface before applying built-up roofing.

(3c) APPLICATION OVER WOOD DECKS—

(3c1) Felt—Apply **[one] [two]** layer **[s]** of dry, saturated roofing felt over the roof boards. Lap the felt at least 1½ in. at joints. **[Felt shall extend 6 in. up on walls and all vertical surfaces and shall finally be turned over and mopped to top of insulation.]**

NOTE: *Felt protects against dripping of pitch or asphalt through deck. For high humidity conditions apply two layers (lapped half) of saturated roofing felt and the Thermax in hot bitumen as called for under (3d).*

(3c2) Laying—Apply the Thermax units over the felt in a single layer of the thickness specified.

(3c3) Nailing—Insulation shall be secured to deck with common **[cement coated]** nails with 1 in. galvanized roofing washers or large headed foundry nails sufficiently long to penetrate through the insulation and provide firm hold in deck. Space nails approximately 12 in. o.c. and not more than 2 in. from edges of the unit. Carry one row of nails longitudinally through the center of each unit.

(3d) APPLICATION OVER CONCRETE DECKS—

(3d1) Felt—Apply **[one] [two]** layer **[s]** of saturated roofing felt over the roof deck, thoroughly stuck in hot **[pitch] [asphalt].** Felt shall extend 6 in. up on walls and all vertical surfaces and shall finally be turned over and mopped to top of insulation.

NOTE: *Include clause (3d1) where interior of structure is subject to high humidity conditions as in paper, textile mills, etc., or on applications made during winter months where decks do not have opportunity to thoroughly cure and dry out before insulation is applied.*

(3d2) Laying—Mop deck thoroughly with **[hot pitch] [hot asphalt]** using not less than 35 lbs. per square. Apply the Thermax units while the mopping is still hot. Firmly bed a single layer of Thermax, of the thickness specified, in the binder over the entire surface.

(3e) APPLICATION OVER STEEL DECKS—

(3e1) Laying—Mop deck thoroughly with hot asphalt using not less than 35 lbs. per square.

NOTE: *Pitch should not be used over steel decks.*

Apply the Thermax units while the mopping is still hot. Firmly bed a single layer of Thermax, of the thickness specified, in the binder over the entire surface.

(4) FINISHED ROOFING

Finished roofing shall be applied over insulation in accordance with the roofing manufacturer's specification.

THERMAX ROOF DECK INSULATION
Note Portland Cement Mortar Grouting and Skim Coat Applied Over the Thermax

SPECIFICATION No. 18
INSULATING STRUCTURAL ROOF SLABS

USE ON FLAT OR PITCHED ROOFS AS A STRUCTURAL INSULATING PRECAST SLAB APPLIED OVER STRUCTURAL STEEL OR WOOD ROOF FRAMING

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

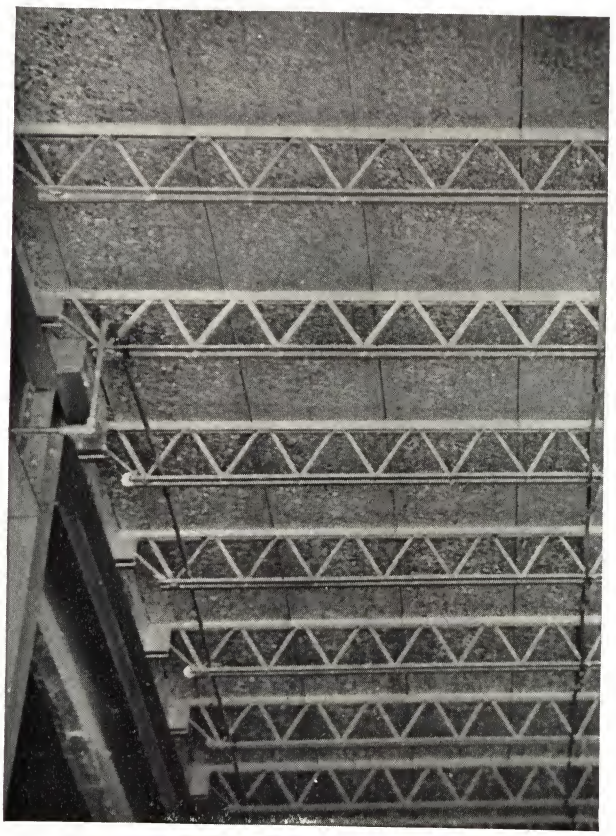
(1) WORK INCLUDED

NOTE: *Here list and locate definitely the roof areas to be constructed of Thermax Slabs. If both 2 in. and 3 in. thicknesses are used, list separately and the respective location or areas.*

(2) MATERIAL

(2a) ROOF SLABS—Roof slabs shall be Thermax Insulative Structural Roof Slabs as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Slabs shall be full **[2 in.] [and] [3 in.]** thick **[as above designated],** 20 in. wide by **[64 in.] [72 in.] [96 in.]** long.

(2b) CLIPS—Clips for attaching Thermax Slabs to the structural steel supporting Ts shall be Thermax Galvanized Roofing Clips.



RED ARROW MOTOR FREIGHT LINES, INC.
View Over Freight Terminal Loading Platform
Thermax Slabs Applied Over Steel Joists

(2c) NAILS—Common cement coated nails driven through 1 in. galvanized roofing washers or large headed foundry nails.

(2c1) Use 16d nails for 2 in. Thermax slabs.

(2c2) Use 30d nails for 3 in. Thermax slabs.

(3) LAYING ROOF SLABS

(3a) GENERAL—Thermax Roof Slabs shall be laid at right angles to the framing members. Ends of slabs shall bear equally on framing members. Break end joints in alternate rows. Protect Thermax with "plank walks" during construction.

(3b) Thermax slabs shall be brought to moderate contact at all joints. Do not force Thermax into place.

(3c) STEEL FRAMING—Thermax Roof Slabs shall be fastened to steel framing Ts with Thermax Clips at each T. Clips shall be secured in place with galvanized nails driven into the Thermax. Sufficient clips shall be applied at eaves and ridges to form soldering grounds for sheet metal work.

(3d) WOOD FRAMING—First nail Thermax to intermediate framing members spacing three (3) nails approximately 9 inches apart o. c. on each bearing. On ends use four (4) nails approximately ⅝ in. in from the edge.

(3e) GROUT—Grout all joints with Portland cement mortar (1 to 3 mix gauged with approximately 10% of hydrated lime) and brush or screed a skim coat of thick consistency over the entire surface before applying the built-up roofing. Protect Thermax Roof Slabs from rain and snow until waterproof roofing is applied.

(4) FINISHED ROOFING

Finished roofing shall be applied over the Thermax Roof Slabs in accordance with the roofing manufacturer's specifications.

NOTE: *A standard built-up 4 or 5-ply roof, recommended.*

(5) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions.*

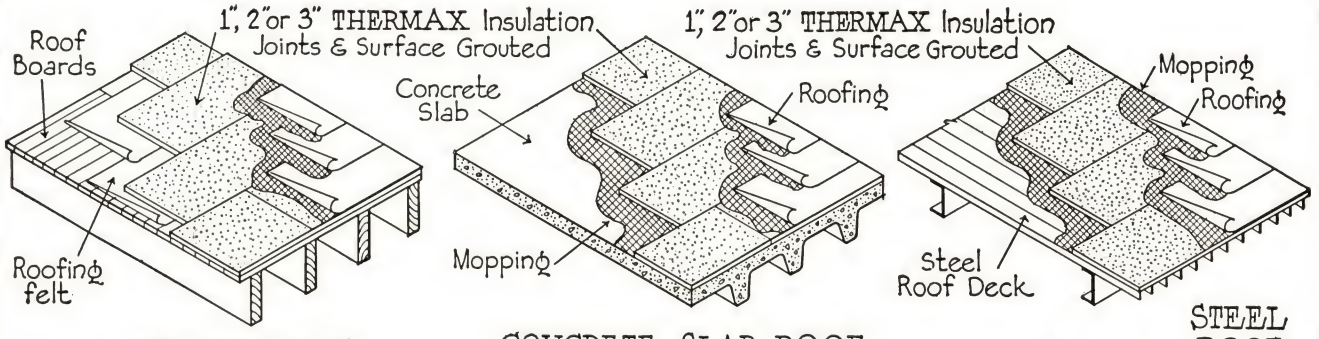
(5a) STEEL ROOF CONSTRUCTION—Design and strength of framing to support Thermax Roof Slabs shall be in accordance with the engineering data pertaining to span and thickness of slab units furnished by The Celotex Corporation to sustain the specified live and dead loads.

The steel, its fabrication and its protection shall be in accordance with the Standard Specifications of the American Institute of Steel Construction.

(5b) PAINTING—The exposed underside of the Thermax Roof Slabs shall be **[spray] [brush]** painted **[previous to] [after]** installation with **[specify brand] [aluminum paint] [light reflecting cold water or oil paint] [specify].**

(5c) PLASTERING—The exposed underside of the Thermax Roof Slabs shall be plastered with a thin coat of **[gypsum or lime plaster] [white Portland cement tempered with hydrated lime] [specify].**

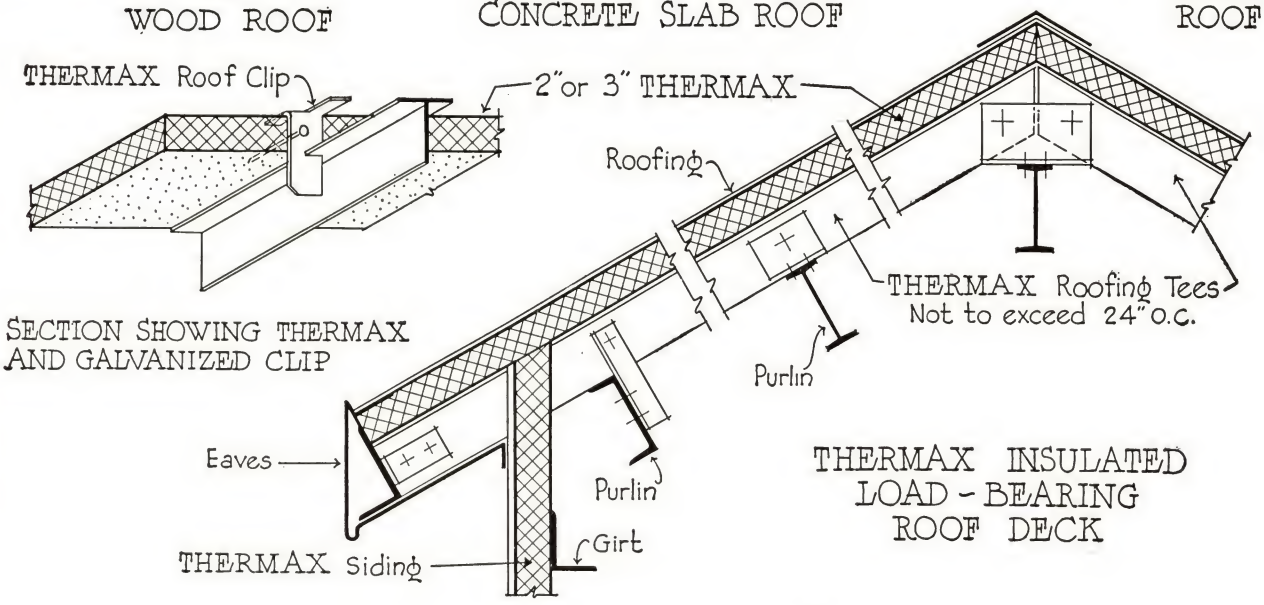
INSULATED ROOFS AND CEILINGS



WOOD ROOF

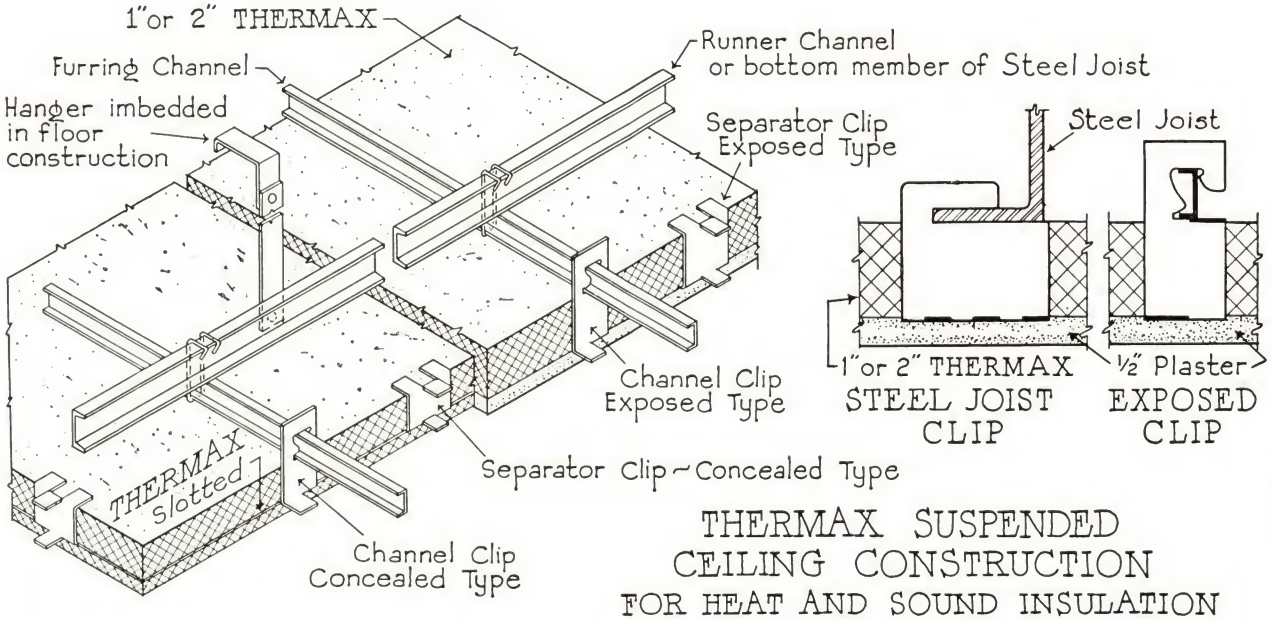
CONCRETE SLAB ROOF

STEEL ROOF



SECTION SHOWING THERMAX AND GALVANIZED CLIP

THERMAX INSULATED LOAD-BEARING ROOF DECK



STEEL JOIST CLIP

EXPOSED CLIP

THERMAX SUSPENDED CEILING CONSTRUCTION FOR HEAT AND SOUND INSULATION

SPECIFICATION No. 19
INSULATING STRUCTURAL ROOF SLABS
LAID IN STEEL TEES

USE AS A COMBINATION THERMAL AND SOUND INSULATION ON STEEL FRAME BUILDINGS

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold face type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the roof areas to be constructed of Thermax Structural Roof Deck. If both 2-inch and 3-inch thicknesses of Thermax are used, list separately and the respective location or areas.*

(2) MATERIAL

(2a) ROOF SLABS—Roof slabs shall be Thermax Insulative Structural Roof Slabs as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Slabs shall be full **[2 in.] [and] [3 in.]** thick **[as above designated],** 20 inches wide by **[specify]** long.

(2b) SUB-PURLINS—Sub-purlins shall be steel tees of sizes and spacings required or indicated on the structural plans, furnished with a shop coat of paint.

(2c) CLIPS—Provide necessary Special Thermax Galvanized Roofing Clips for securing Thermax Slabs to sub-purlins when extreme wind pressures are to be considered.

(3) LAYING ROOF SLABS

Thermax Roof Slabs shall be laid in place between steel sub-purlins (tees) provided under "Structural Steel Work" and which are erected in place by the Steel Contractor. The Thermax Slabs shall be of such lengths and so placed that the end joints will be concealed by the main purlins.

All spaces at the end and longitudinal joints shall be filled flush with the top of the Thermax Slabs with an insulation compound or cement grout.

The entire surface of the Thermax Roof Deck shall be smoothly topped with **[specify thickness]** of Portland cement mortar (1:3 mix gauged with approximately 10% of hydrated lime) before applying built-up roofing. Average care should be taken, until the cement topping has set, to avoid damage to the Thermax Slabs from traffic and other causes. The roof slabs shall be stored under cover and no greater surface shall be laid than can be coated as above the same day, unless the slabs are protected from rain and snow.

Protect Thermax with "plank walks" during construction.

(4) FINISHED ROOFING

Finished roofing shall be applied over the Thermax Roof Slabs in accordance with the roofing manufacturer's specifications.

NOTE: *A standard built-up 4 or 5-ply roof is recommended.*

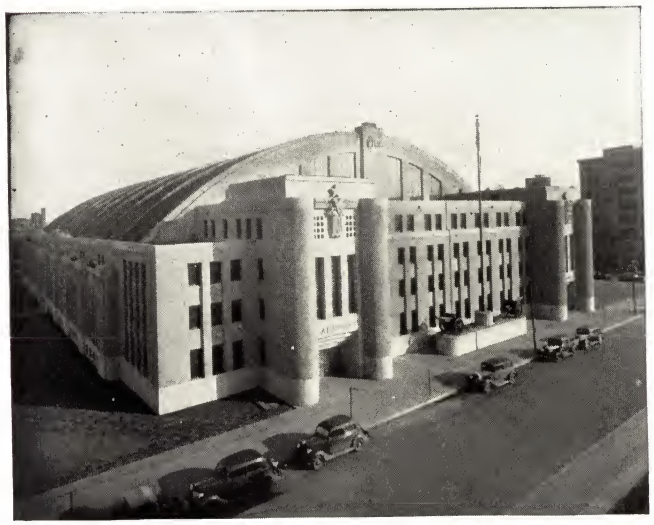
(5) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions.*

(5a) STEEL ROOF CONSTRUCTION—Design and strength of framing to support Thermax Roof Slabs shall be in accordance with the engineering data pertaining to span and thickness of slab units furnished by The Celotex Corporation to sustain the specified live and dead loads.

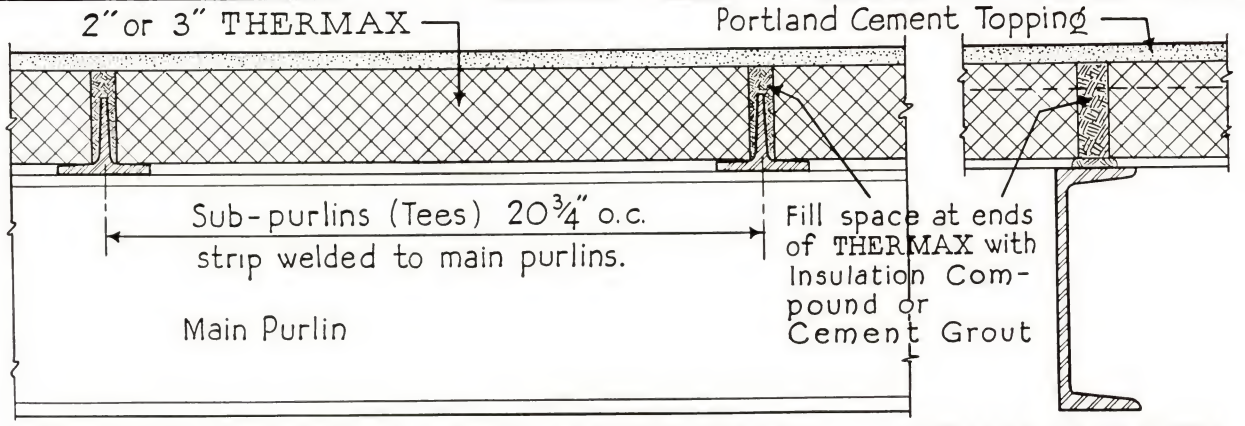
The steel, its fabrication, and its protection shall be in accordance with the Standard Specifications of the American Institute of Steel Construction.

(5b) PAINTING—The exposed underside of the Thermax Roof Slabs shall be **[spray] [brush]** painted **[previous to] [after]** installation with **[specify brand] [aluminum paint] [light reflecting cold water or oil paint] [specify].**

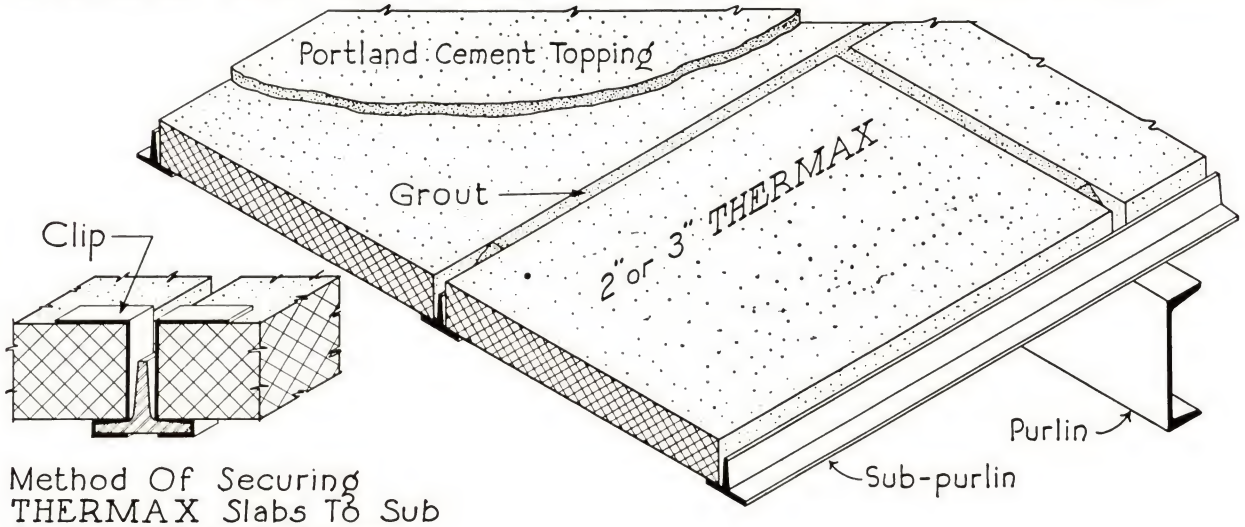


MINNEAPOLIS ARMORY, MINNEAPOLIS, MINN.
Architect & Engineer, Inc.—P. C. Bettenburg; Consulting Architect & Engineer—W. H. Wheeler
Two-inch Thermax Laid in Tees for Concrete Forming, and a Combination Roof Deck Insulation and Acoustical Treatment

INSULATING STRUCTURAL ROOF SLABS



TYPICAL SECTION THRU ROOF DECK CROSS SECTION



Method Of Securing THERMAX Slabs To Sub Purlins When Extreme Wind Pressures Are To Be Considered

TRANSVERSE STRENGTH OF THERMAX SLABS—WITHOUT AND WITH CEMENT TOPPING

Data from Independent Laboratory Results

Slab thickness	Span between supports c. to c.	Ultimate concentrated load at center	Equivalent uniformly distributed load	Breaking load per sq. ft.	Average ultimate load center deflection*
3 in. Thermax	**24 in.**	**575 lbs.**	**1150 lbs.**	**345 lbs.**	**.327 in.**
2 in. Thermax	**24 in.**	**350 lbs.**	**700 lbs.**	**210 lbs.**	**.314 in.**
2 in. Thermax	**16 in.**	**555 lbs.**	**1110 lbs.**	**500 lbs.**	**.236 in.**

Notes: *Deflections shown are not permanent. Spacing supports on greater than 24 inch centers is not recommended.

Slab thickness		Span between supports c. to c.	Ultimate total load†	Breaking load per sq. ft.	Maximum center deflection*
Thermax	Cement topping (1:3 mix)				
3 in.	approx. ¼ **in.**	**24 in.**	**2061 lbs.**	**625 lbs.**	**0.198 in.**
3 in.	approx. ¼ **in.**	**24 in.**	**2411 lbs.**	**725 lbs.**	**0.130 in.**
3 in.	approx. ¼ **in.**	**24 in.**	**2751 lbs.**	**826 lbs.**	**0.112 in.**
Average of three tests			**2408 lbs.**	**725 lbs.**	**0.146 in.**

Notes: †Load applied at third points across slab. Includes 41 lbs. weight of beam transferring load.
*Deflections shown are not permanent.
Spacing supports on greater than 24 inch centers is not recommended.

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WORLD'S LARGEST MANUFACTURER OF STRUCTURAL INSULATION

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A complete specification covering the uses and recommended methods of application of Beaver Insulating Products is available on request from any of the sales offices listed below.

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Beaver Insulating Board products are manufactured 100% from cane fibre produced in the Hawaiian Islands. Ample supplies of raw material are accessible and definitely assured due to control of 90% of the Hawaiian Island sugar crop by the manufacturers.

The use of pure cane fibre without any binder or added filling material assures a board that has utmost structural strength plus full dead air space. When foreign material is added, it detracts from the grip of the fibres and fills up the dead air space. *Therefore, the ideal insulating board is 100% cane fibre.*

In the preparation of the fibres for manufacturing, only a gentle low temperature cooking process is used. This avoids any injury to the individual fibres while permitting their thorough softening and refining. The fibres are separated without losing any of their original strength through over-heating and the processing provides for the complete interlocking of the fibres in forming the board.

The ease of separation and complete refining of the cane fibres also permits thorough treatments for moisture resistance, termite and rot proofing. These treatments are administered under strict control in manufacturing Beaver Insulating Board Products.

TERMITE PROOF

The termite proofing process used in the manufacture of Beaver Insulating Board is no longer dependent upon laboratory tests to demonstrate its effectiveness against these highly destructive insects. Beaver Insulating products have now been long in use in many foreign countries where termites for many years have menaced and destroyed buildings constructed from non-termite proofed materials.

Prevalent in 45 of the 48 states, termites now exact an annual toll in the United States of 50 million dollars. Termite proof Beaver Insulating Board does its part in combating this menace.

INSULATING VALUE

In tests conducted by such an authority as J. C. Peebles, Mechanical Engineer of Armour Institute of Technology, Chicago, the heat conductivity of Beaver Insulating Board, flat plate method, was found to be 0.33 B.t.u.'s per hour, per square foot of material, per degree Fahrenheit of temperature difference between the surfaces of the material for a 1-in. thickness.

COLORS

Beaver Insulating Board and Beaver Insulating Tile and Plank are now available in two colors—natural and ivory.

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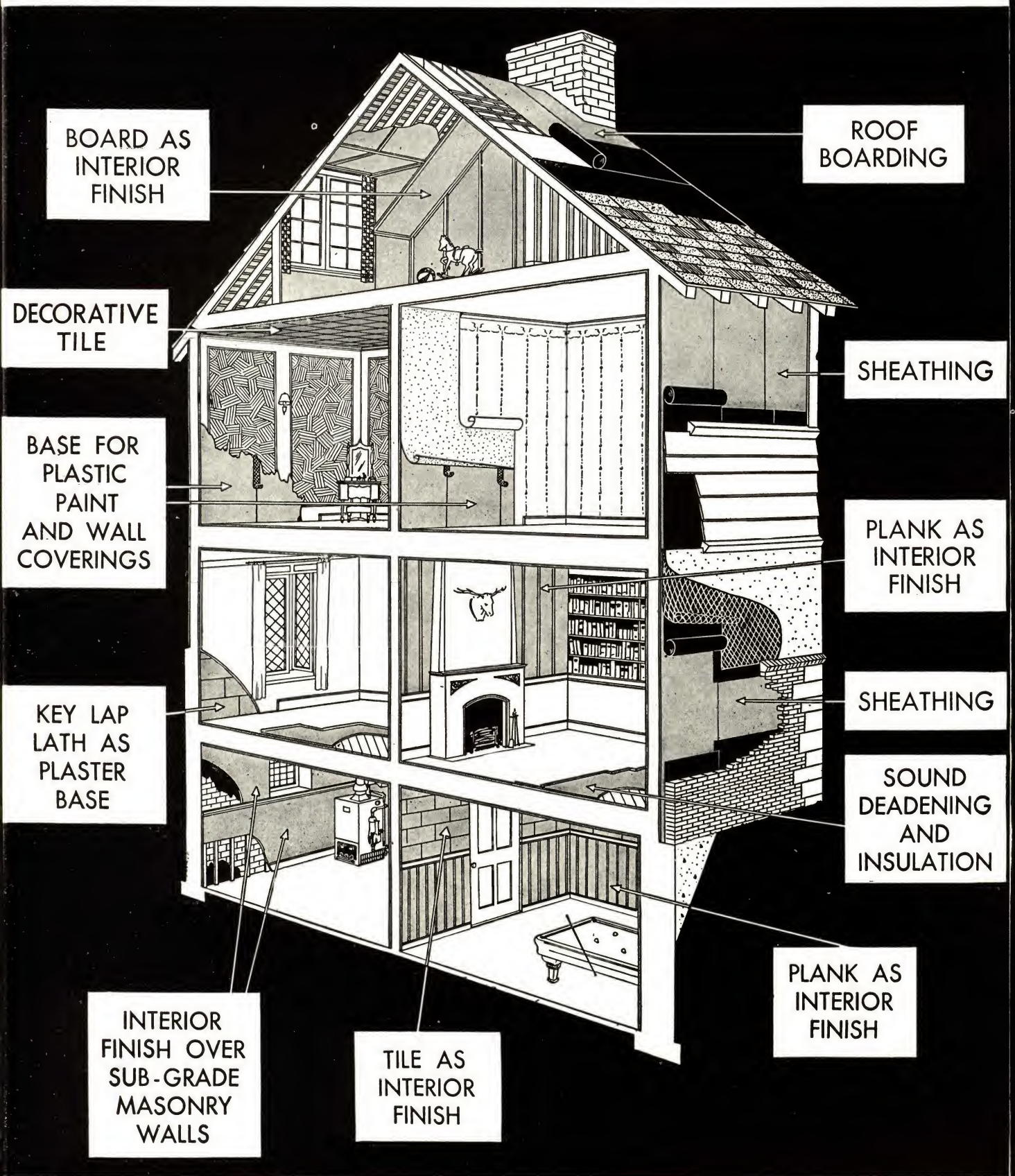
BEAVER INSULATING PRODUCTS

WHERE BEAVER INSULATING BOARD IS USED



certain-teed

BEAVER INSULATING DECORATIVE TILE (Patent Applied For)

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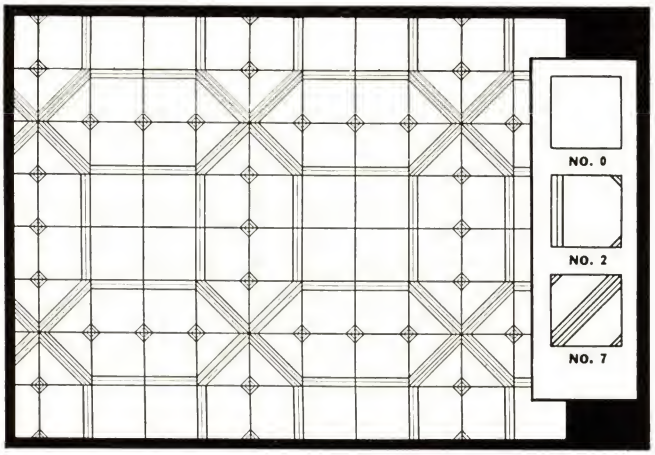
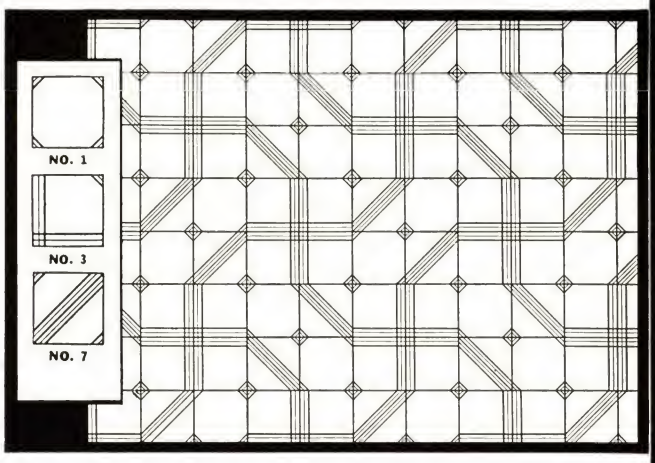
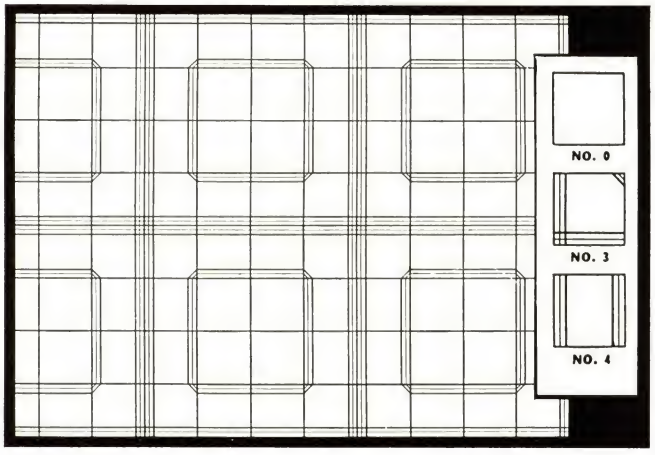
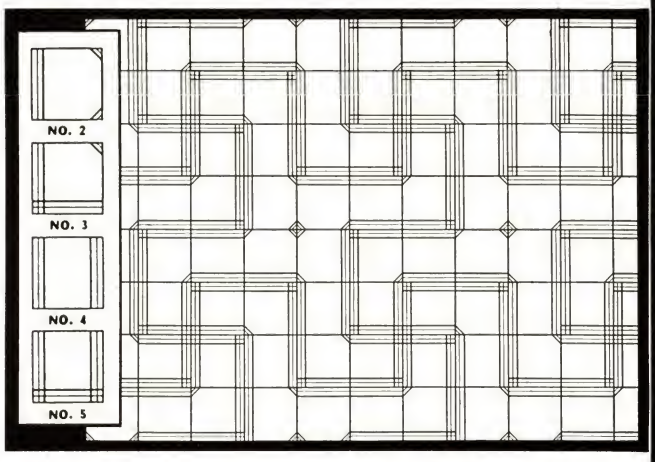
BEAVER INSULATING DECORATIVE TILE (Patent Applied For)

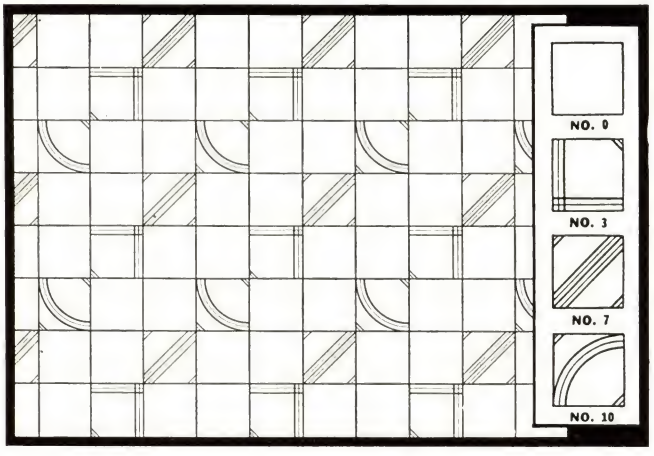
Each of the designs shown below is composed of the Units shown at the side

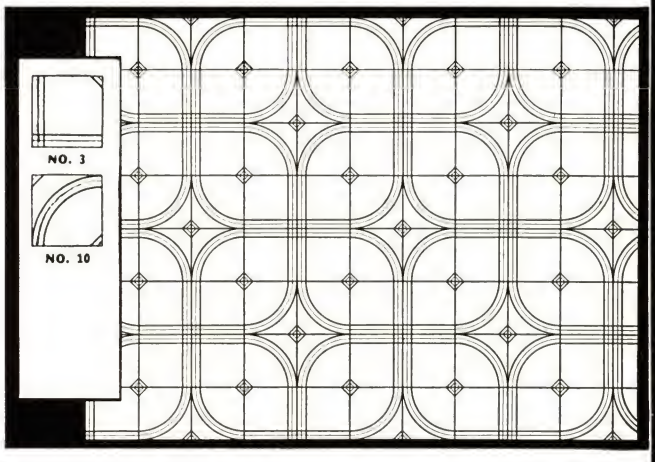












Certain-teed now offers a new decorative and insulating medium in the form of Beaver Insulating Decorative Tile, designed by Vahan Hagopian, Architect, A.I.A. Diplomé par le Gouvernement Francais, 40 E. 49th St., New York City. Mr. Hagopian has specialized for many years both here and abroad in the development of building products from the esthetic point of view, as well as in their use and application.

Beaver Insulating Decorative Tile are produced in eleven individual design units which offer an amazing variety of possibilities from a decorative standpoint. While these units are all very simple in individual surface decoration, they are so designed that endless combinations of units may be made to form all-over patterns ranging from plain, dignified effects to extremely modernistic and elaborate decorative fields. The texture, the natural color and the play of light over these designs are attractive without any additional decoration. They may, however, be painted and decorated to suit any required color scheme. They are offered as a stock item, ready cut, ready to put up. Packed in cartons of 4, 6, 12 and 24 units each, the units are 12x12 in. and ½ in. thick, and are beveled on all sides. Additional variations may be obtained by combining them with the board or plank.

certain-teed

10 – 27

BEAVER INSULATING BOARD PRODUCTS

Certain-teed offers the following products for decorative treatments which also have the advantage of sound and heat control. Beaver Insulating Board, which comes in plain sheets, can be readily shiplapped, bevelled, grooved and otherwise decorated by the use of standard cutting tools either in the shop or on the job.

Beaver Insulating Board comes in sheets 4 ft. wide, and 6, 7, 8, 8½, 9, 9½, 10 and 12 ft. long. Thicknesses of ⅜, ½, ¾ and 1 in. are available. Beaver Insulating Board is composed 100% of cane fibre matted under pressure and is homogeneous in all thicknesses. It is available in natural and ivory colors.

BEAVER INSULATING PLANK

Beaver Insulating Planks are similar to Beaver Insulating Boards, but they are shiplapped, beaded and bevelled on the long edges, and made at the factory in the shape of planks of varying widths and lengths.

They may be applied vertically or horizontally for decorative wall or ceiling treatment, providing heat and sound insulation and acoustical effects.

The use of Beaver Insulating Planks will give the effect of old Colonial interiors. Easily installed against any surface or suitable framing arrangement.

Random widths permit a wide variety of designs.

Beaver Insulating Plank are made in the following sizes: 6, 8, 10, 12 and 16 in. wide and 6, 7, 8, 9, 10 and 12 ft. long. Thickness: ½ in.

Planks are available in natural and ivory colors.

Interior with Beaver Insulating Plank Walls and Insulating Tile Ceiling

BEAVER INSULATING TILE

Beaver Insulating Tile is different from the Beaver Insulating Decorative Tile in that it is furnished with plain surfaces, and in large and small sizes. It is manufactured and supplied from Grade A Beaver Insulating Board only, which is selected for its perfection of surface, color, natural or ivory, and texture, thus assuring pleasing and neutral tone effects.

All sizes of Beaver Insulating Tile carry a standard bevel and shiplap so that they are readily fitted, and provide continuous heat and sound insulation and acoustical effects.

Various designs of Beaver Insulating Tile in combination with Beaver Insulating Plank and standard size sheets of Beaver Insulating Board, plain or decorated on the job, make possible pleasing interior treatments for any type or size of meeting hall, room or office.

Beaver Insulating Tile comes in the following sizes: *Large sizes* are 16x32 in. and 24x48 in. *Small sizes* are 12x12 in., 12x24 in., 16x16 in., and 24x24 in. Thicknesses, ½ and 1 in.

The large sizes of Beaver Insulating Tile are bundled into easily handled packages which fully protect all edges and surfaces. The small sizes are packed in cartons specially designed to provide extra protection for shiplapped edges during shipment and delivery to the job. Tiles are available in natural and ivory colors.

BEAVER INSULATING KEY LAP LATH

Beaver Insulating Key Lap Lath is composed entirely of cane fibres compressed into sheet form and treated to render it moisture resistant and vermin proof. Manufactured in the form of panels of suitable size for plastering, packed in bundles for protection and convenience in handling.

The Key Lap joint gives to plasterers what they have long desired—a deep, straight side, easy-to-fill, mechanical key along the horizontal edge. This makes deep penetration of plaster possible and also better keying of plaster to lath, thus increasing the plaster bond and giving added protection against cracks. The shiplap feature of Key Lap Lath prevents heat and cold leakage at horizontal joints by providing continuous insulation.

Specifying Beaver Insulating Kay Lap Lath insures getting better mechanical key, better plaster bond, better insulation. Additional information on request.

Sizes—18x48 in. Thicknesses: ½ in., ¾ in. and 1 in.

Weight—Average 650 lbs. per 1000 sq. ft. for full ½-in. thickness.

Certain-teed GYPSUM WALLBOARD AND BEAVER GYPSUM LATH REFLECTIVE INSULATION

Certain-teed Gypsum Wallboard and Beaver Gypsum Lath are manufactured in the form of gypsum wallboard and gypsum lath with one surface covered with a bright reflective metal foil. (Gypsum wallboard is also available with foil on both surfaces.) The reflective features of the metallized surfaces which are applied to the water resistant tough fibre surfaces as additional covering, provide effective insulation not heretofore available in this type of product.

It has been proved by scientific tests that ⅜-in. gypsum wallboard or lath surfaced with metal foil on one side has an effective insulating value equivalent to that of ½-in. fibre insulating board when used as specified in building construction. In addition to this remarkable insulating feature it has the structural strength and fireproof qualities inherent in gypsum wallboard and lath.

For further information, consult nearest sales office.

Application of Gypsum Lath (Reflective Insulation) with Metal Foil Against the Studs

DRY THERMOCRETE

SUPERIOR DRY FILL INSULATION

Dry Thermocrete is a light, fluffy gypsum material possessing the natural insulating properties of gypsum, plus the bulk thickness and millions of insulating dead air cells assured by its fluffy consistency. It stops the passage of heat through the walls and floors of a building and deadens the sound.

Gypsum being fire resistant means that Dry Thermocrete acts as a fire-stop between wood members as well as an efficient insulator when poured between the studs of a wall—an always dangerous area for conducting fire.

Dry Thermocrete also provides economy in heating during cold weather and comfort in warm weather.

EASILY APPLIED

Dry Thermocrete is put in place by the simple process of pouring the dry material directly from the easily handled 50-lb. paper sacks into the space between the inner and outer walls and floors, or spread between attic joists. Either new or old buildings may thus be insulated.

Pouring Dry Thermocrete Between Attic Joists and Leveling Off to the Proper Depth with a Notched Board

EFFICIENCY OF TYPICAL CONSTRUCTION, UNINSULATED AND INSULATED

Walls	Uninsulated	Insul. with 3⅝-in. Dry Thermocrete
Clapboard, paper, sheathing, stud, lath and plaster	0.227	0.094
Brick veneer, paper, sheathing, stud, lath and plaster	0.165	0.082
Stucco, paper, sheathing, stud, lath and plaster	0.257	0.099
Ceilings		
Lath and plaster—no floor	0.502	....
Lath and plaster—single floor	2.234	....
Lath and plaster—no floor—(insulated with 2 in. of Dry Thermocrete)	....	0.127
Lath and plaster—no floor—(insulated with 3 in. of Dry Thermocrete)	....	0.092
Lath and plaster—no floor—(insulated with 4 in. of Dry Thermocrete)	....	0.073

THERMAL CONDUCTIVITY

Weight per cu. ft.	B.t.u. per sq. ft. per hour per 1° F. per in. thick	Authority
19.8 lbs.	.35	Bureau of Standards

Conductivity slightly higher when used in walls.

COVERING CAPACITY

Position of use	Per 50-lb. bag		Per ton	
	Sq. ft. 1-in. thick	Cu. ft.	Sq. ft. 1-in. thick	Cu. ft.
Walls	25	2	1000	83
Ceilings and floors	30	2½	1200	100

Dry Thermocrete is made in one weight only and is packed in 50-lb. paper bags with complete directions printed on back.

Certain-teed

KALITE SOUND ABSORBING PLASTERS

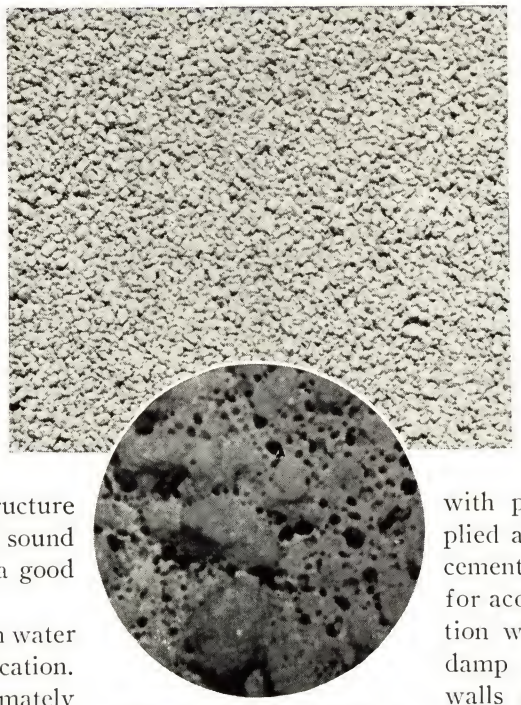
A SUPERIOR MATERIAL FOR SOUND CONTROL

For Plain and Ornamental Acoustical Plaster Treatments

WHAT KALITE PLASTER IS

Kalite Sound Absorbing Plaster has the basic properties that adapt it to the requirements of modern construction. Kalite is a highly cellular plaster that absorbs sound. It is made of carefully graded and sized pumice of a special variety, mixed with calcined gypsum and other necessary ingredients. When the plaster sets, there are minute air spaces around the pumice particles. Through the body of the plaster, these small air spaces intercommunicate either directly or through the porous structure of the pumice and produce those sound absorbing qualities necessary in a good acoustical material.

On the job, Kalite is mixed with water only and is then ready for application. Kalite mortar weighs approximately one-half as much as ordinary sanded gypsum plaster mortar, and furnishes a smooth, or textured hard finish.



Photograph Showing Surface of Kalite Plaster. Enlarged View Shows Great Porosity of Surface

THREE TYPES OF KALITE PLASTER

In addition to Kalite Cast, the two types of Kalite Plaster are offered as follows:

KALITE "H" PLASTER—Made of a pumice aggregate with a gypsum binder, available in either natural gray or buff.

If Kalite Sound Absorbing Plasters are to be decorated, consult the nearest sales office of CERTAIN-TEED PRODUCTS CORPORATION for recommendations.

KALITE HYDRAULIC PLASTER—Made of a pumice aggregate with portland cement binder and applied as a finish coat over the portland cement base coat plaster, it is suitable for acoustical correction or noise reduction where physical conditions require damp proof construction, such as the walls and ceilings of steam kitchens, swimming pools, etc. It is the color of natural portland cement. Kalite is finished with either the wood float or steel trowel.

The growing use of Kalite to increase efficiency by reducing the reverberations of sound is exemplified by the installation of Cast Kalite in the new 59th Street Branch of Dry Dock Savings Bank in New York. It was used in ceilings of work spaces to improve working conditions by reducing the noise level and was used in public spaces to build good will by increasing customer comfort and minimizing possible errors.

SOUND ABSORPTION COEFFICIENTS OF KALITE PLASTERS

KALITE "H" PLASTERS, AS MEASURED BY U. S. BUREAU OF STANDARDS UNDER DATE OF OCT. 16, 1935

Kalite thickness	Frequency 128	256	512	1024	2048	4096	Noise coefficient
½-in. trowel finish	.36	.33	.46	.70	.66	.68	.55
¾-in. trowel finish	.43	.38	.63	.78	.65	.70	.60

TEST BY U. S. BUREAU OF STANDARDS UNDER DATE OF MARCH 25, 1936 ON KALITE "H" PLASTER WHEN DECORATED WITH TWO COATS OF CERTAIN-TEED NON-BRIDGING LACQUER APPLIED WITH A BRUSH

Kalite thickness	Frequency 128	256	512	1024	2048	4096	Noise coefficient
½-in. trowel finish	.26	.31	.46	.67	.65	.68	.50

At the left are given tables showing the results of tests for sound absorption as measured on Kalite "H" panels constructed of 1½-in. angle iron carrying bars spaced 3 ft. 10 in. on centers, 1-in. furring channels spaced 12 in. on centers, 3.4-lb. expanded metal lath with standard thickness of scratch and brown coats of gypsum hardwall plaster.

In the application of both of these tests Kalite was applied in what is called "one coat doubled up."

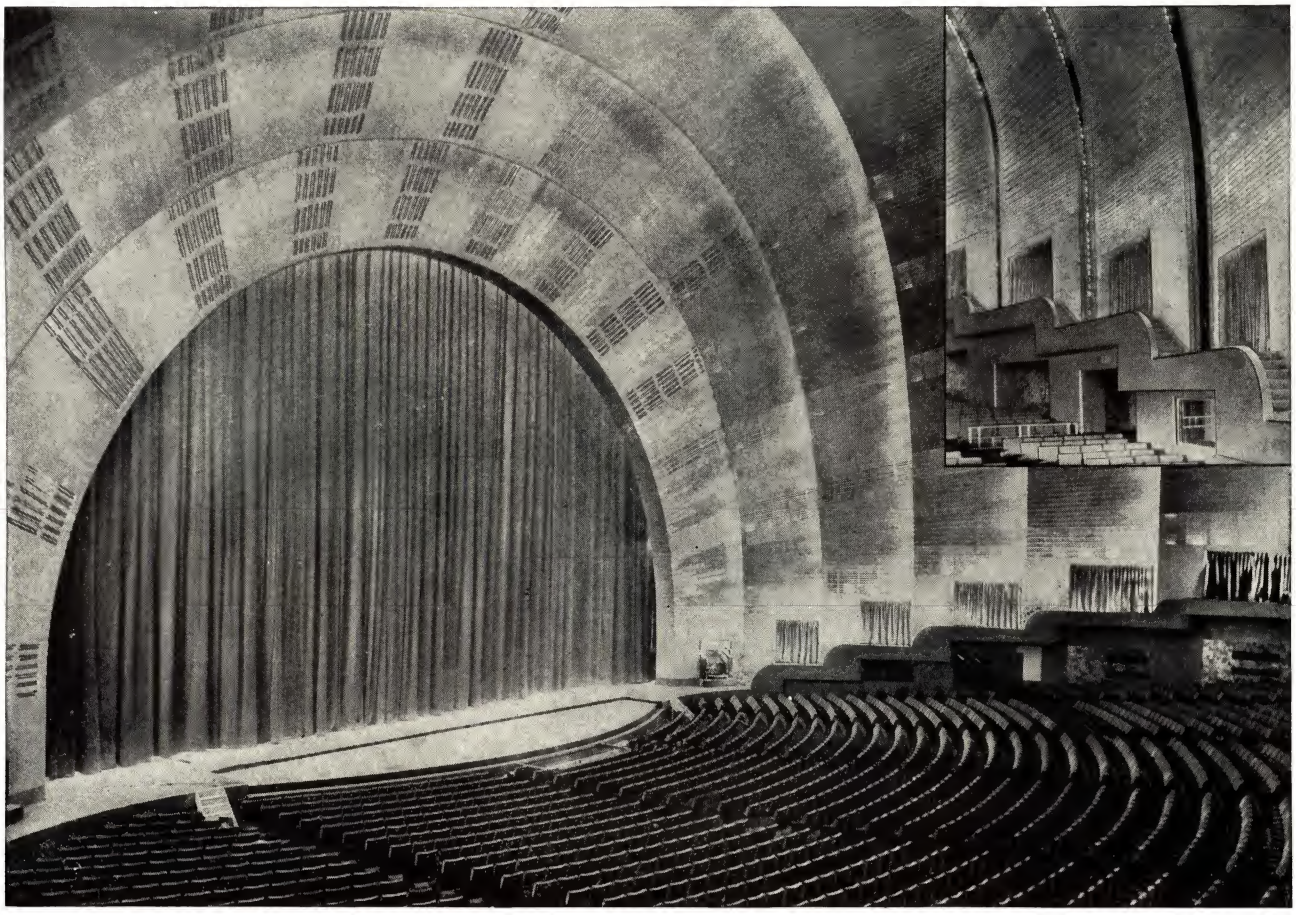
The doubled up coat applied after the scratch-in coat had taken up—after about one hour lapse of time.

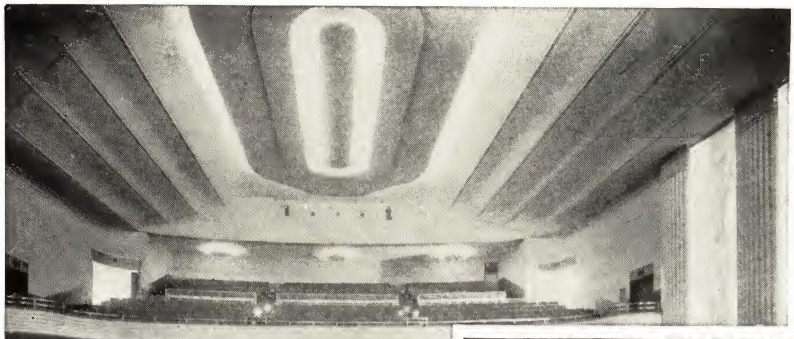
Samples of Kalite Plasters will be sent on application to any Certain-teed Sales Office

See page 11 for partial list of completed Kalite jobs

Certain-teed

KALITE SOUND ABSORBING PLASTERS





Above:

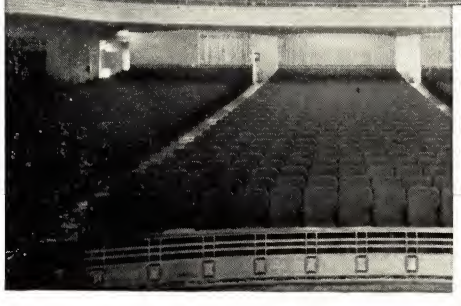
Interior of International Music Hall, Rockefeller Center, Radio City Section, New York, N. Y.

Entire fluted ceiling and walls produced in Kalite Sound Absorbing Plaster.

Left and Below:

New Criterion Theatre, Broadway, 44th and 45th Sts., New York, N. Y.

EUGENE DE ROSA, Archt., N. Y. C.
HEGEMAN HARRIS CO., INC., Bldrs., N. Y. C.



Ceiling and Side Walls treated with Kalite Sound Absorbing Plaster. Note mural decoration painted over Kalite in panels between fluted pilasters on the side walls.

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KALITE SOUND ABSORBING PLASTERS

KALITE CAST—This is a high grade material for plain and ornamental casting purposes; it is made of a pumice aggregate and gypsum binder and furnished in a medium coarse and fine texture. This product combines high sound absorbing properties with structural strength, sharp outline of arrises, decorative detail in the finished casting, and a most pleasing texture and appearance.

Kalite Cast in either the coarse or fine textures is available in five colors: Natural White, Sandstone, Limestone, Light Buff, Medium Buff.

If Kalite Sound Absorbing Plasters are to be decorated, consult the nearest sales office of CERTAIN-TEED PRODUCTS CORPORATION for recommendations.

Kalite Cast opens another and extremely interesting avenue to the architect and engineer to combine sound control with ornamental and decorative design at a reasonable cost.

Practically any architectural motif or ornamental design as produced in ordinary white casting plaster can be carried out in accurate detail with Kalite.

Kalite Cast is recommended for ornamental cast work in all types of buildings, such as assembly rooms, libraries, theatres, churches, auditoriums, banks and all monumental types of buildings, lobbies, and corridors, public meeting rooms, or wherever it is desirable to combine sound control with decorative architectural motifs.

Kalite Cast has been thoroughly proven in commercial work and has been successfully developed both from the technical standpoint of acoustics and practical workability.

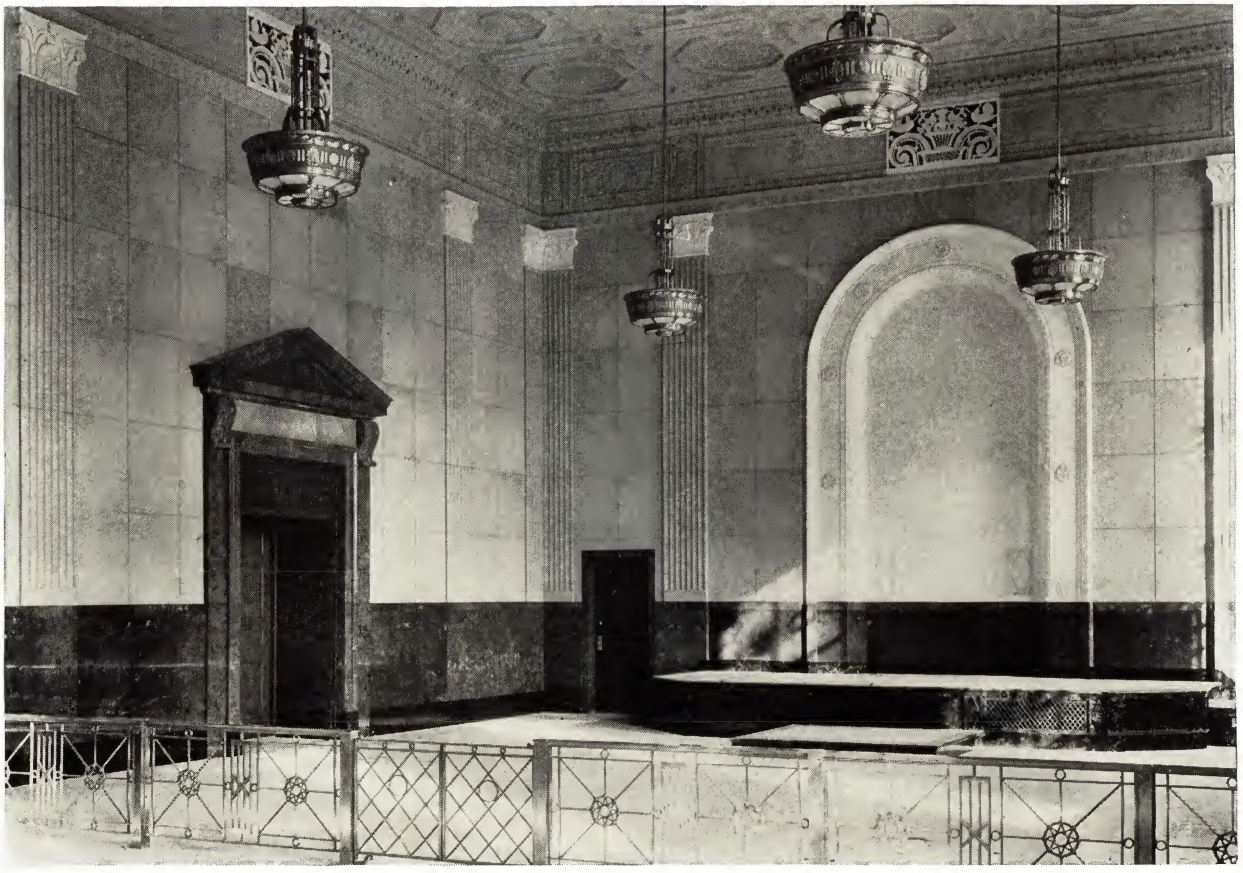
In field tests, conducted in interiors where Kalite Cast has been installed, this Certain-teed material proved completely satisfactory, meeting all specifications. (See Bureau of Standards Tests below.)

BUREAU OF STANDARDS SOUND-ABSORPTION TESTS ON KALITE CAST, MARCH 14, 1936

*** Frequency cycles per second	GRADE D Fine Aggregate			GRADE A Coarse Aggregate		
	Thickness			Thickness		
	1 inch	1½ inch	2 inch	1 inch	1½ inch	2 inch
128	.09	.20	.22	.06	.15	.23
256	.30	.39	.48	.19	.34	.55
512	.49	.59	.55	.42	.64	.73
1024	.54	.61	.58	.69	.74	.67
2048	.47	.60	.54	.74	.60	.64
4096	.48	.67	.53	.64	.69	.62
Noise reduction coefficient	.45	.55	.55	.50	.60	.65

Specifications

Specifications for decoration are available upon application at any sales office of the CERTAIN-TEED PRODUCTS CORPORATION.



Interior of Court Room No. 1, Post Office and Courthouse Building, Columbus, Ohio

HENRY ERICSSON COMPANY, General Contractors, Chicago, Ill. RICHARDS, MCCARTHY & BULFORD, Architects, Columbus, Ohio

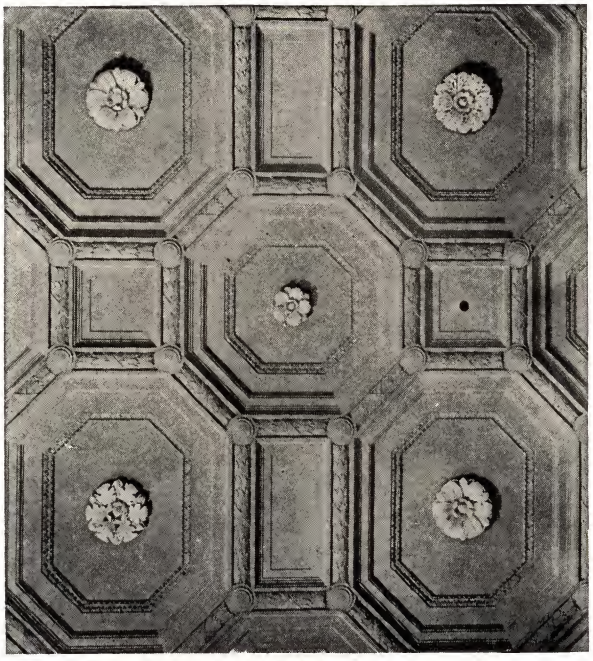
Ornamental Coffer Ceiling, Cornice and Frieze, as well as Wall Treatment of Fluted Pilasters, and Ashlar Panels in between. Pilasters are fabricated of Kalite Cast. The acoustics of the courtroom were tested by the U. S. Bureau of Standards after installation of Kalite, and accepted as satisfactory.

Certain-teed

KALITE SOUND ABSORBING PLASTERS

PARTIAL LIST OF KALITE INSTALLATIONS

Radio City Theatre (Music Hall), New York, N. Y.
Radio City Theatre (New Roxy), New York, N. Y.
Radio City Building No. 10
Auditorium, Department of Interior, Washington, D. C.
Bankers Trust Building, New York, N. Y.
Continental Bank Building, New York, N. Y.
Loew's Boulevard Theatre, New York, N. Y.
Metropolitan Life Insurance Building, New York, N. Y.
Translux Theatre, 49th Street, New York, N. Y.
Lincoln Bank Building, Brooklyn, N. Y.
Vitaphone Studios, Brooklyn, N. Y.
Warner Brothers Studio, Brooklyn, N. Y.
Radio Station WEBR, Buffalo, N. Y.
Empire Theatre, Mobile, Ala.
Yale University Buildings, New Haven, Conn.
Manteno State Hospital, Manteno, Ill.
St. Mary's Church, Pontiac, Ill.
Technical High School, Springfield, Mass.
U. S. Post Office Building, New Bern, N. C.
RKO Theatre, Trenton, N. J.
Post Office and Courthouse, Columbus, Ohio
Wooster College Auditorium, Wooster, Ohio
City Hall and Courthouse, Easton, Pa.
Easton Hospital, Easton, Pa.
Yorktown Theatre, Ogontz, Pa.
Grange Theatre, Philadelphia, Pa.
Midway Theatre, Philadelphia, Pa.
Court Rooms, Federal Court Building, New York, N. Y.
Ascot Theatre, 183rd St. and Grand Concourse, New York, N. Y.
Alteration to Vitaphone Studio of Warner Bros. Studios, Brooklyn, N. Y.
Transmitter Building, WHN, Astoria, L. I., N. Y.
Fenimore Cooper School, East Chester, N. Y.
U. S. Customs and Court House Building, Mobile, Ala.
Knickerbocker Theatre, Nashville, Tenn.
French Casino, Washington Avenue and 12th Street, Miami Beach, Fla.
New Criterion Theatre, Broadway and 44th to 45th Sts., New York, N. Y.
Aluminum Company of America, New Kensington, Pa.
Drydock Savings Bank, New York, N. Y.
Federal Courthouse, Buffalo, N. Y.



Federal Courthouse Building, New York City
CASS GILBERT, Architect
JAS. STEWART & Co., INC., Builders Executed by F. L. HEWES, INC.
Ornamental Precast Sound Absorbing Ceiling Fabricated with Kalite Cast—Courtroom No. 3

Ornamental Precast Sound Absorbing Ceiling Fabricated with Kalite Cast, Court of Appeals, Federal Court Building, New York City

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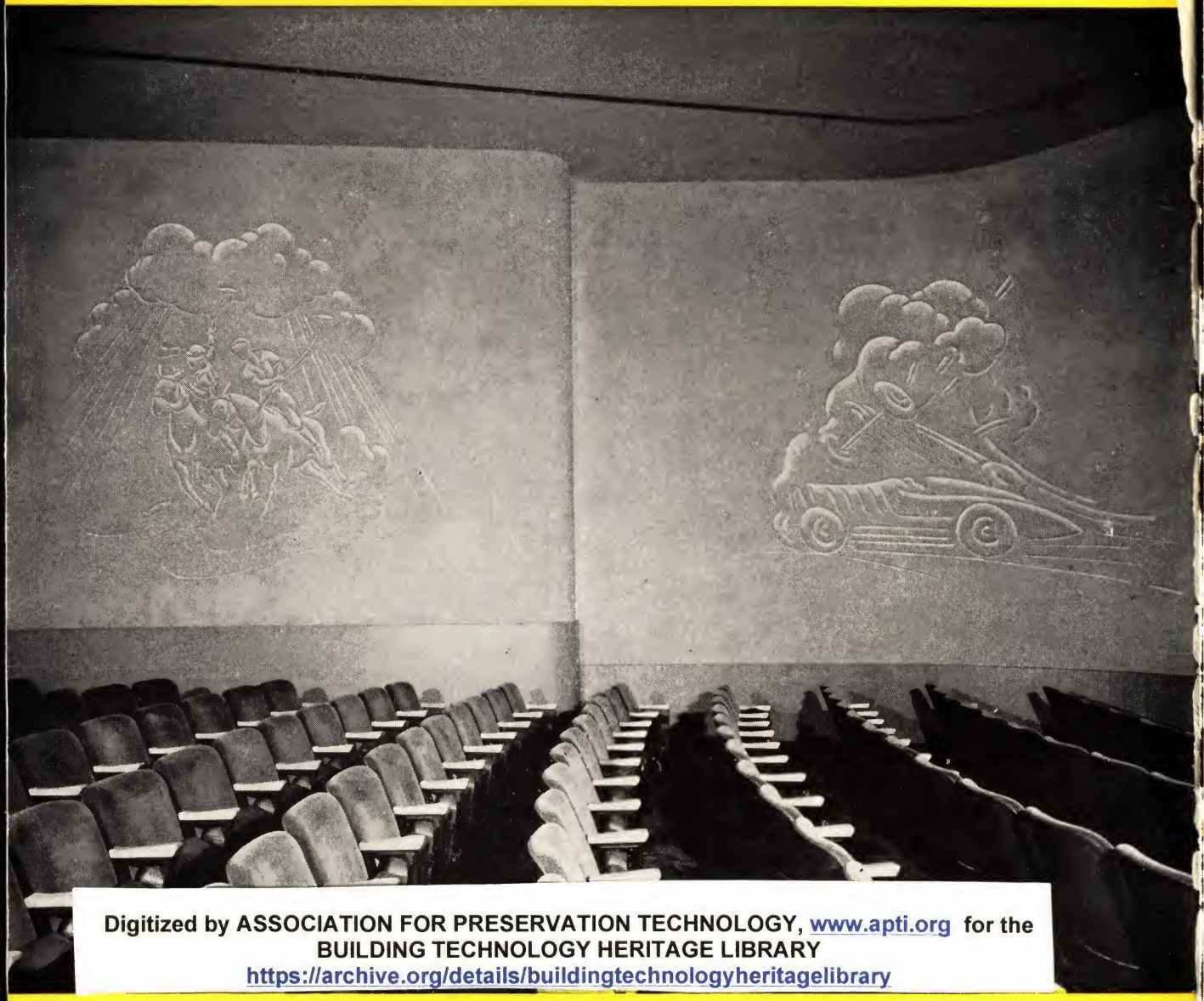
PRODUCTS FOR THERMAL INSULATION AND SOUND CONTROL



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TRANS LUX THEATER, WASHINGTON, D. C.
Kalite wall panels, trowel finished and carved after application

CERTAIN-TEED PRODUCTS CORPORATION

GENERAL OFFICES: NEW YORK, N. Y.

FIR-TEX

Super Insulating Board

NATURE'S GIFT FROM THE GREAT NORTHWEST WOODS

10/28

There is a FIR-TEX Insulating Board for Every Purpose

FIR-TEX "F" FIRKOTE INSULATING SHEATHING

Standard Thickness: 25/32".
Sizes: 4′ x 7′, 4′ x 8′, 4′ x 8½′, 4′ x 9′, 4′ x 9½′, 4′ x10′, 4′ x 12′.
Uses: Exterior wall sheathing, exterior pitched roof sheathing, exterior finish.

Description: Square edged. Every fibre waterproofed with asphalt and fused under intense heat. Both surfaces are given additional waterproof treatment, then glazed for easy handling. The exposed surface is marked with guide lines for accurate nailing.

See Sections I and II

FIR-TEX "L" INSULATING PLASTER BASE LATH

Standard Thicknesses: ½", ¾", 1".
Size: 18" x 48".

Description: Long edges shiplapped and beveled, ends beveled only. Made especially to receive and hold plaster.

See Section III

FIR-TEX "BC" IVRYKOTE BUILDING BOARD

Glazed, mottled ivory washable surface.
Standard Thicknesses: ½", 1".
Sizes: 4′ x 4′, 4′ x 5′, 4′ x 6′, 4′ x 7′, 4′ x 8′, 4′ x 8½′, 4′ x 9′, 4′ x 9½′, 4′ x 10′, 4′ x 12′.
Uses: Interior finish, sound deadening and insulation of pitched roofs of frame buildings. For these uses, Fir-Tex building board insulates against heat, cold and sound at the cost of insulation alone.

Description: A square-edged building board in standard sizes listed above. Made from natural wood fibres, not reduced to cellulose by chemicals, and pressed into boards with tremendous insulating qualities.

See Section IV

FIR-TEX "B" BUILDING BOARD

Same as Fir-Tex "BC" Ivrykote Building Board except color is neutral tan.

See Sections IV, VII, VIII, IX and XIII

FIR-TEX "BEC" IVRYKOTE ECONOMY BOARD

Same as Fir-Tex "BC" Building Board except it is made only in ½" thickness.

See Section VIII

FIR-TEX "BE" ECONOMY BOARD

Same as Fir-Tex "BEC" Ivrykote Economy Board except color is neutral tan.

See Section VIII

FIR-TEX "T" INSULATING TILE

Colors: Fir-Tex "TC" Ivrykote, Fir-Tex "T" neutral tan, or Fir-Tex "TS" sprayed with special acoustical paint in standard colors, namely: white, ivory, cream and buff.
Standard Thicknesses: ½", ¾", 1". Greater thicknesses on special order.
Small Sizes: 6" x 6", 6" x 12", 8" x 8", 8" x 16", *12" x 12", 12" x 24", *16" x 16", 24" x 24".
*Standard sizes.

Large Sizes: *16" x 32", 18" x 32", 16" x 48", 18" x 48", 24" x 48", also Fir-Tex "TCM" (Ivrykote) or Fir-Tex "TM" (Neutral tan) multiple tile board, 48" x 48".
Description: Cut to rectangular shape, beveled on all four edges with a "AA" joint similar to a tongue and groove joint.
Uses: Decorative interior finish, wall and ceiling; for sound absorption and special acoustical work in stores, theatres, broadcasting studios and other places where the quieting of sound is a factor.

See Section V

FIR-TEX "P" INSULATING FINISH PLANK

Standard Thicknesses: ½", 1".

Colors: Fir-Tex "PC" Ivrykote, Fir-Tex "P" neutral Tan or Fir-Tex "PS" sprayed with special acoustical paint in standard colors, namely: white, ivory, cream and buff.

Sizes: 6", 8", 10", 12", 16" wide by 6', 7', 8', 8½', 9', 9½', 10', 12' long; also Fir-Tex "PCM" (Ivrykote) and Fir-Tex "PM" (Neutral tan) multiple Finish Plank, 4' wide, same lengths.

Description: Long edges beveled and beaded with a "AA" joint similar to a tongue and groove joint.

See Section VI

FIR-TEX ACOUSTICAL PRODUCTS

All Fir-Tex building board, Finish Plank and Tile are available in either neutral tan or sprayed with a special acoustical paint.

Uses: For sound absorption and control of the acoustics in stores, offices, theatres, churches, auditoriums, schools, etc.

FIR-TEX "R" ROOF INSULATION BOARD

Standard Thicknesses: ½", 1", 1½", 2" and thicker upon special order.

Sizes: Square edge 24" x 48", and when furnished with offset edges, 22" x 47".

Uses: For insulation of flat decked roofs of wood, steel, concrete, structural gypsum or unit tile, under built-up roofing.

Description: A low density Fir-Tex Board of maximum insulating properties made in one homogeneous board up to 1½" without lamination.

See Sections XI and XII

FIR-TEX "RV" VAPOR-PROOF ROOF INSULATION BOARD

Standard Thicknesses: ½", 1", 1½", 2" and thicker upon special order.

Sizes: Square edge 24" x 48", and when furnished with offset edges, 22" x 47".

A special Fir-Tex Roof Insulation Board wrapped in waterproof paper and sealed.

Uses: For insulation of flat decked roofs of wood, steel, concrete, structural gypsum or unit tile, where severe conditions of moisture or humidity require a super-type of insulation.

See Sections XI and XII

FIR-TEX "Z" REFRIGERATION INSULATION BLOCKS

Standard Thicknesses: 1", 1½", 2", 3", 4" and greater if required.

Sizes: 12" x 36", 18" x 36", 24" x 36", 24" x"8

Uses: Especially made for normal refrigeration and cold storage jobs.

Description: Low density; high insulation value. Made in one homogeneous board up to 1½" without lamination.

See Section X

FIR-TEX "ZV" REFRIGERATOR AND COLD STORAGE LOW TEMPERATURE INSULATION BLOCKS

Standard Thicknesses: 1", 1½", 2", 3", 4" only.

Sizes: 12" x 36", 18" x 36", 24"x 36", 24" x 48".

Uses: For severe service in cold storage work.

Description: Low density blocks wrapped in vapor-tight paper. Moisture-proof, water-proof, vapor-proof.

See Section X

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PREFACE to FIR-TEX MASTER SPECIFICATIONS

In presenting these specifications, effort has been made to provide all clauses which in ordinary practice apply to average work. It is recognized that problems arise in individual jobs, which require analysis and special treatment. Any attempt to anticipate in these specifications every such problem would tend to complicate the specifications and confuse the reader. We request every architect to consult us freely on all matters pertaining to insulation of any description — write or wire

ENGINEERING DEPT.,
FIR-TEX INSULATING BOARD CO., INC.,
1108 Porter Bldg.,
Portland, Oregon.

EXTERIOR WALL SHEATHING

FIR-TEX "F" FIRKOTE SHEATHING
Master Specifications

1. **Work Included:**
(NOTE:—Here list and locate accurately the wall and other areas to be covered.)
2. **Material:** Sheathing shall be Fir-Tex Firkote Sheathing $^{25}/_{32}$" thick, 4 ft. wide x length as best adapted to framing conditions.
3. Framing members shall be spaced accurately at not to exceed 16" O.C. 2" x 4" headers or cross members shall be installed as may be necessary, so that every end and edge of each Fir-Tex Firkote Sheathing Board shall rest on a nailing base.
4. **Application:** Insulation continuity shall be maintained, and all joints shall center over framing members. The Firkote Sheathing shall be applied with the length paralleling the framing members, and with the guide lines exposed for nail spacing. Boards shall be of sufficient length to completely span between sills and plates or other framing members. The boards shall be spaced approximately $^1/_8$" apart at sides and ends, but brought to snug contact with door and window frames. *NEVER* under any circumstances shall the boards be forced into place.
5. **Nails:** 8 d. common nails shall be used.
6. **Nailing:** The intermediate members shall be nailed first, spacing nails 6" apart. The exterior members shall then be nailed, spacing nails 3" apart and $^3/_8$" from the edge of the board. All nails shall be driven well home.
7. Flashings of the usual type shall be installed in the usual manner.
8. **Exterior Finishes:**
(NOTE:—Fir-Tex is not a nailing base.)
   a. **Wood siding** shall be applied directly over the Firkote Sheathing, nailing through to the studs and using nails of sufficient length to penetrate 1" into the wood. All joints shall butt over the center of framing members.
   b. **Shingles or shakes:** Furring strips 1" x 2" shall be securely installed horizontally over the Firkote Sheathing, and spaced to fit the shingles or shakes, using nails of sufficient length to penetrate into the wood member at least 1". The shingles or shakes shall then be nailed to the furring strips.
   c. **Brick or Stone Veneer:** Metal ties or anchors of the usual type, properly spaced, shall be nailed through the Fir-Tex into the wood member, using nails of sufficient length to penetrate at least 1" into the stud. The masonry veneer shall be laid in the usual manner, allowing not less than $^1/_2$" space between the face of the Fir-Tex and the back of the veneer.
(NOTE:—It is not necessary to use building paper under any of the above exteriors—siding, shakes, masonry.)
   d. **Exterior Stucco:** All Fir-Tex surfaces beneath exterior stucco shall be covered with a continuous layer of asphalt-coated waterproof paper. The stucco reinforcing metal shall be applied with a furring nail of sufficient length to penetrate 1" into the wood member, and which will hold the metal tight and accurately in a position approximately $^1/_4$" from the face of the Firkote Sheathing, permitting the mortar to fill the space between the metal and the Fir-Tex.
(NOTE:—Wood furring strips are not recommended because of their tendency to expand and crack the stucco when they become wet during the application of the stucco.)

SECTION II

EXTERIOR WALL FINISH

FIR-TEX "F" FIRKOTE SHEATHING
Master Specifications

(NOTE:—Fir-Tex Firkote Sheathing is admirably adapted for use as an exposed exterior finish over frame construction in such cases as summer cabins, fishing and hunting lodges, dwellings on large construction projects.)

1. Framing, application, etc.: When Firkote is used as an exterior finish, the procedure in the main shall be as specified for sheathing application with the following exceptions:
   a. Nails shall be galvanized.
   b. Due care shall be exercised in the matter of spacing and application so that the battens covering joints shall be symmetrical.

   c. Firkote sheathing shall be of sufficient length so that no splice be used on any height 12′ or less.
   d. Painting: The Fir-Tex surface shall be given two coats of good lead and oil paint. Painting shall be done before application of battens.
   e. Battens and wood-trim shall be applied with nails of sufficient, length to penetrate at least 1" into the wood member.

SECTION III

PLASTER BASE

FIR-TEX "L" INSULATING PLASTER BASE LATH
Master Specifications
INSTALLATION AND APPLICATION INSTRUCTIONS

1. **Work Included:**
(NOTE:—Here list and locate accurately the wall and ceiling areas to be covered.)
2. **Material:** Plaster Base shall be Fir-Tex Insulating Lath, ($^1/_2$") ($^3/_4$") (1") thick, 18" wide by 48" long with shiplapped joints, delivered to the job in the manufacturers' original packages. All packages shall be opened and the contents exposed to the air 24 hours before application.
3. Framing members shall be spaced accurately at not to exceed 16" O.C.
4. **Application:** In cold or damp weather, extra precaution shall be used. All doors and windows shall be in place and heating plant in operation before application. Plastering shall be commenced as soon as application is completed. Insulation continuity shall be maintained. Fir-Tex Insulating Lath shall be applied horizontally across framing members in a continuous line with all end joints staggered and centered on framing members. Fir-Tex Lath shall be spaced $^1/_8$" between ends and the ship-lapped edges shall be brought to moderate contact only. The Fir-Tex Lath shall be fitted closely to all openings and to all intersecting surfaces, but in no case shall it be forced into place. Where cutting is necessary, the Fir-Tex Lath shall be sawed with an ordinary carpenter's saw, or scored with a sharp hatchet and broken along the scored line. Where piecing is necessary, use only strips of Fir-Tex.
5. *The Fir-Tex Lath shall not be moistened.*

6. **Nailing:** Nails shall be ordinary galvanized shingle nails with ¼" heads, and of sufficient length to penetrate at least 1" into the framing members. The intermediate members shall be nailed first, using 5 nails to each member, and spacing nails approximately 4" apart, and in each case driving center nail first. Edge nails shall be approximately ½" from the edge.
7. **Reinforcing:** At all interior and exterior corners, a standard metal reinforcing shall be installed over the Fir-Tex Lath, and secured to the framing members. At all exterior corners, metal corner beads shall be installed over the reinforcing and secured to the framing members.

PLASTERING INSTRUCTIONS

1. *The Fir-Tex Lath shall not be moistened.*
2. Use only gypsum plaster.
3. The plaster shall be applied in standard three-coat job as follows:
   a. Scratch coat: Use one part by weight of gypsum plaster to two parts by weight of clean, sharp, well-graded sand. Add sufficient accelerator to obtain set in approximately one hour. Spread scratch coat very thin and even, pressing well into edges and joints. Allow to set hard before proceeding with the brown coat.
   b. Brown coat: Use one part by weight of gypsum plaster to 3 parts by weight of sand. Scratch and brown coats combined shall have a thickness of at least ⅜".
   c. Finish coat: This coat shall not exceed ⅛" in thickness, making the total plaster thickness not less than ½".
4. Plaster shall be protected against freezings and dry-outs. Heat shall be provided in cold weather and openings shall be covered in hot dry weather.

(NOTE:—Due to the moisture-resistant properties of Fir-Tex Lath, all plaster moisture must be carried off by the air within the room, which fact requires that adequate ventilation be provided.)

SECTION IV

INTERIOR FINISH

FIR-TEX "BC" IVRYKOTE BUILDING BOARD
(Mottled ivory, glazed washable surface)

FIR-TEX "B" BUILDING BOARD
(Neutral tan color)

Master Specifications

1. **Work Included:**
   (NOTE:—Here list and locate accurately the wall and ceiling areas to be covered.)
2. **Material:** Interior Finish shall be Fir-Tex Building Board (½"), (1") thick, 4' wide and of lengths best adapted to show a minimum of joints. Surface shall be (Fir-Tex "B"—neutral tan) (Fir-Tex "BC"—Ivrykote).
3. **Framing:** Members shall be spaced accurately at not to exceed 16" O.C. Headers shall be installed back of all baseboards, chair rails and other heavy wood trim. Additional headers, studs and joists shall be installed where necessary. Framing members shall present a true, even surface.

3A. Alternate: Framing members shall be spaced accurately at not to exceed 16" O.C. Sound, dry, wood lining* of uniform thickness shall be installed horizontally on all walls and ceilings and spaced 00"** apart. Shims shall be installed as may be necessary to provide a true even surface.
*(NOTE: Here name any inexpensive dry material not to exceed 6" wide.)
**(NOTE: Here specify 3" if 6" material is used; 2" if 4" material is used.)

3B. Alternate: Masonary Walls: (1" x 2") (1" x 3") sound, dry wood furring strips shall be installed (vertically) (horizontally) securely to masonary walls (12") (16") O.C., and shimmed as may be necessary to present a true, even surface. Header strips of same material shall be installed as may be required to provide adequate support behind all heavy wood trim, and also behind all edges of every sheet.

4. **Cutting and Fitting:**
   a. Exposed joints: All cutting, bevelling, and grooving shall be done in a neat, workmanlike manner with special tools for that purpose.
   (NOTE:—Bevil Devil, Stanley Cutter, and sharp linoleum knife are all excellent tools.)
   b. Joints to be covered: Cutting may be either with special tools or with a sharp fine tooth saw, using rapid strokes with a minimum of pressure.
5. **Application:**
   a. All packages shall be opened and the Fir-Tex boards placed singly on edge around the room at least 24 hours before erection. In localities of exceptionally low humidity the back side of each board shall be moistened lightly and piled 24 hours before erection.
   b. The Fir-Tex boards shall be applied with length (paralleling) (at right angle to) the framing members with (Fir-Tex "BC"—Ivrykote) (Fir-Tex "B"—neutral tan) face exposed. All joints shall center over framing members.
   c. Spacing. Exposed joints: Fir-Tex boards shall be brought to moderate contact but never forced into place.
   Battened joints: Fir-Tex boards shall be spaced ⅛" apart.
   d. Nails: Shall be of sufficient length to penetrate at least 1" into wood member. Exposed nails shall be galvanized finish nails.

Nails concealed by battens shall be galvanized shingle nails with at least ¼" head.

   e. Nailing: Intermediate members shall be nailed first, driving each nail at a slight angle and spacing them 6 inches apart. Exterior members shall then be nailed, driving each nail well home and spacing them 3" apart and ⅜" in from the edge. Same nailing, 3" apart, shall be done at edges of both ends. Once the first nail has been driven in a Fir-Tex board, all necessary nailing of that board shall be done before proceeding to the next. In no instance shall a Fir-Tex board be left partially nailed.
   f. Battens: (Wood) (Metal) Battens (size) and Wood Trim (specify kind, size, etc.) shall be installed with nails of sufficient length to penetrate at least 1" into the wood member.
   g. General suggestions: The following suggestions are recommended by sound, practical experience:
      (1) Plan your work carefully before ordering your Fir-Tex Boards. Purchase only those lengths best adapted to your particular job. The wide range of lengths available permits the reduction of joints to a minimum.
      (2) As a general rule, apply ceiling first and walls last.
      (3) Consider your spacing carefully before driving first nail. Usually a better appearance can be obtained by commencing work in center of area rather than at one end.
      (4) For best results, even when framing members are spaced 16" O.C., we suggest the wood lining as outlined in (3A) alternate, rather than headers as outlined in (3). In all cases where members are spaced greater than 16" O.C. or where members are irregular or uneven, the lining method shall be used. If there is a great deal of header and truing work to be done, the lining produces an incomparably better job and costs little more.
      (5) Where Fir-Tex Interior Finish is to be applied in a new building or one under construction, all doors and windows shall be in place and heating plant shall be in operation before Fir-Tex is delivered on the job. Care shall be exercised that Fir-Tex be not subjected to the moisture incidental to cement and plaster work. Such work should be completed and permitted to dry before Fir-Tex is brought on the job.
      (6) In those cases where transportation or other problems make it necessary to have Fir-Tex boards delivered to job in advance of its use, they shall be left in their tough original packages, and shall be stored in a clean, dry place.

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INTERIOR FINISH—FIR-TEX-TILE

FIR-TEX "TC" (Ivrykote finish)
FIR-TEX "T" (Neutral tan color)
FIR-TEX "TS" (Sprayed white, ivory, cream, buff)
FIR-TEX "TCM" (Ivrykote Multiple Tile)
FIR-TEX "TSM" (Sprayed Multiple Tile)

Master Specifications.

1. **Work Included:**
(Here list and locate accurately the ceiling areas to be covered.)

2. **Material:** Ceiling covering shall be Fir-Tex Tile (½") (¾") (1") in thickness and (here specify size — see list of products, page 2) in size with bevelled edges and interlocking joints, delivered to the building site in manufacturer's original packages. Exposed surface shall be (Fir-Tex "T" —neutral tan) (Fir-Tex "TC"—Ivrykote) (Fir-Tex "TS"—sprayed—specify color).

3. **Base:**

a. Where joists are exposed, or where plastered areas are uneven or in poor condition—

(1.) Solid wood base: Sound, dry lumber of uniform thickness (1" x 4") (1" x 6"), and (matched) (sized) shall be securely nailed to joists to form a continuous level nailing base. Shims shall be installed as may be required to accomplish this result.

(1A.) (alternate) Furring strips: Sound, dry lumber of uniform thickness (1" x 3") (1" x 4") shall be securely nailed to joists on centers to conform accurately with the Fir-Tex Tile size and design, but in no case to exceed 16" O.C.
(NOTE:—Best practice suggests a maximum of 12" O.C. Thus 16" x 32" Fir-Tex Tile would be applied to 8" centers rather than 16".)

b. Where plastered areas are level, true and in good condition—(See 5 b., this section.) Cementing under Application.

4. **Cutting and Fitting:** All cutting, bevelling and grooving shall be done in a neat, workmanlike manner with special tools for that purpose. (Suggested tools are Bevil Devil, Stanley Cutter, sharp linoleum knife.)

5. **Application:**

a. (1) Fir-Tex Tile shall be laid in exact accordance with detailed drawings.

(2) Where ceiling is furred, Fir-Tex Tile shall be laid with long edges paralleling the furring strips. Where application is being made direct to plastered area or to solid backing, Fir-Tex Tile may be laid in any direction indicated.

(3) Spacing: Fir-Tex Tile shall be brought to snug contact, but never forced into place. All lines and grooves shall be kept straight and true.

b. Cementing: (This method is advocated in all better class work, but must be attempted only in cases where the plaster is level, even and true, or where adequate, dry, sound furring or solid backing has been installed. This method should be confined to those mechanics experienced in its use.)
(1) Adhesive: Adhesive shall be best quality acoustical cement. (Suggested brand—Atlas Acoustick made by Atlas Supply Co. of Manayunk, Philadelphia, or other good acoustical cements. Sound practice suggests avoiding ordinary linoleum cements.)
(2) Spots of adhesive about the size of a half-dollar and at last ⅛" thick shall be applied to the back surface of Fir-Tex small Tile near each corner, and on Fir-Tex large Tile additional spots shall be applied not over 10 inches apart O.C. Press Tile into position, using a sliding sidewise motion, and hold until cement begins to set.

c. Nailing: Nails shall be spaced not over 6" apart where possible, and at each corner, using galvanized finish nails of sufficient length to penetrate at least 1" into the wood member. Nails shall be driven at slight angle, and kept ⅜" back from the bevel. (This method is sometimes used directly to the joists when spacing of joists coincides with size of tile; (Example: 16" x 32" Tile applied directly on joists spaced 16" O.C.) but best practice suggests that nailing always be done to solid wood backing or to wood furring strips.

d. Concrete construction: Area shall be inspected and shall be thoroughly clean. Low spots shall be treated with acoustical cement to bring them flush with surface. Fir-Tex Tile shall then be applied as outlined in 5. b. Cementing, this section.

SECTION VI

INTERIOR FINISH—FIR-TEX FINISH PLANK—FRAME CONSTRUCTION

FIR-TEX "PC" (Ivrykote finish)
FIR-TEX "P" (Neutral Tan color)
FIR-TEX "PS" (Sprayed white, ivory, cream, buff)
FIR-TEX "PCM" (Ivrykote Multiple Finish Plank)
FIR-TEX "PSM" (Sprayed Multiple Finish Plank)

Master Specifications.

1. **Work Included:**
(Here list and locate accurately the wall areas to be covered.)

2. **Material:** Wall covering shall be Fir-Tex Finish Plank (½") (1") in thickness and (6") (8") (10") (12") (16") (combination of any or all) in width, and of lengths best adapted to show a minimum of joints.
(NOTE—Fir-Tex Finish Plank is available in lengths up to 12 ft. See list of Products, page 3. Surface shall be [Fir-Tex "P" neutral tan] [Fir-Tex "PC" Ivrykote] [Fir-Tex "PS" Sprayed—specify color].)

3. **Framing:**
(NOTE:—Either of the two methods given below may be used, but the first is incomparably the better method and not a great deal more expensive.)

a. Sound dry wood lining of uniform thickness (here specify any inexpensive wood lining material. ½" x 6" S1S Dry Com. Fir Crating, or 1" x 4", or 1" x 6" S1S Dry Com. Fir) shall be securely nailed, horizontally, to framing members, spacing lining units (Solid base) (2" O.C.) (3" O.C.). Lining shall be shimmed as may be necessary to present a true-even surface.
(NOTE:—For best results, specify solid base, though it is thoroughly sound practice to space 4" lining 2" apart and 6" lining 3" apart. Lining wider than 6" had best be avoided when possible, as the narrower width makes a smoother wall.)

b. Headers or cross members shall be installed between studding back of all baseboard, chair rail and other heavy wood trim. Additional headers shall be installed to provide adequate support for individual Fir-Tex Finish Planks.

4. **Cutting and Fitting:** All cutting, bevelling and grooving shall be done in a neat, workmanlike manner, with special tools for that purpose (Bevil Devil, Stanley Cutter, sharp linoleum knife).

5. **Application:**
a. Fir-Tex Finish Plank shall be applied with joints brought snugly together, but in no case forced into place.

b. Galvanized finish nails of sufficient length to penetrate one inch into the wood member, shall be driven at a slight angle, and spaced not to exceed 6" apart where possible.

6. **Application with Acoustical Cement:**
(NOTE:—This method is advocated on all better class work, but shall be attempted only where base is solid wood, wood lining, cement or plaster walls in good condition, and shall be confined to mechanics experienced in its use.)

a. Adhesive shall be best quality acoustical cement (suggested brand, Acoustick, made by Atlas Mfg. Co. of Manayunk, Philadelphia, or other good acoustical cements). Sound practice suggests avoiding ordinary linoleum cements.

b. Spots of adhesive about the size of a half-dollar and at least ⅛" thick shall be applied to the back surface of each Fir-Tex Finish Plank near each edge, and not over 10" apart. Press Fir-Tex Plank into position using a sliding sidewise motion, holding in place until cement begins to set.

SOUND CONTROL ... Acoustical Correction

FIR-TEX "T" ACOUSTICAL TILE
(Neutral Tan or Sprayed with Acoustical Paint)
FIR-TEX "P" ACOUSTICAL PLANK
(Neutral Tan or Sprayed with Acoustical Paint)
FIR-TEX "B" ACOUSTICAL BOARD
(Neutral Tan or Sprayed with Acoustical Paint)

Master Specifications

Fir-Tex Acoustical Products are available in a wide range of thicknesses, sizes, patterns and colors (See list of products, page 3), and are particularly adaptable for use in theatres, churches, auditoriums, gymnasiums, schools, restaurants, offices.

Each of these Fir-Tex products derives its acoustical qualities from millions of air voids or cells in each square foot of material and it has not been necessary to mar its surface with unsightly punctures in order to accomplish satisfactory results. The smooth, beautiful surface of Fir-Tex acoustical products benefits the architect in many ways and through him his client, viz:

1. The absence of surface defacement permits a wide range of possibilities in the matter of interior decoration which is thus accomplished at the cost of acoustical correction only.
2. The elimination of extra manufacturing expense enables Fir-Tex Acoustical products to be sold at a lower cost per unit of sound absorbed than many other comparable materials.
3. The fact that all Fir-Tex Acoustical products are uniform in thickness throughout the entire area of each unit means that thermal insulation is accomplished without any additional expense.
4. All Fir-Tex Acoustical products are exceedingly light in weight with the resultant advantages apparent to any architect. In some cases, comparable materials are more than twice the weight of Fir-Tex.

The efficiency of Fir-Tex Acoustical products is shown in the following tables summarizing the results of sound absorption tests conducted by Vern O. Knudsen, Ph.D., Consultant on Acoustics.

Frequency of Test Tone	Coefficients of Sound Absorption		
	½" thick	1" thick	1½" thick
128 cycles	.14	.20	.18
256 cycles	.19	.32	.65
512 cycles	.38	.69	.65
1024 cycles	.64	.73	.60
2048 cycles	.80	.85	.58
4096 cycles	.68	.70	.52

SECTION VIII

SOUND CONTROL

Transmission of Sound through Partitions and Floors

FIR-TEX "BC" IVRYKOTE BUILDING BOARD

FIR-TEX "B" BUILDING BOARD

FIR-TEX "BEC" IVRYKOTE ECONOMY BOARD

FIR-TEX "BE" ECONOMY BOARD

FIR-TEX "L" INSULATING PLASTER BASE LATH

FIR-TEX INSULATING INTERIOR FINISH (Fir-Tex "T" Tile and Fir-Tex "P" Finish Plank)

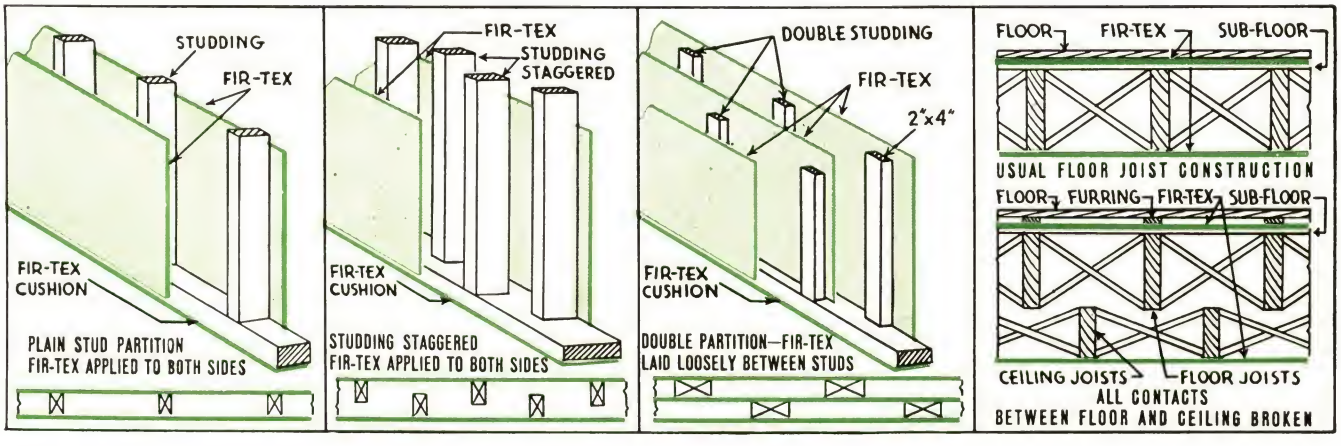
(NOTE:—A single ½" thickness of Fir-Tex, used either as a plaster base or as interior finish, is more resistant to the transmission of sound than is ordinary wood lath and plaster. Used as a plaster base in the ordinary manner on all walls and partitions, Fir-Tex satisfactorily solves the usual problems of sound transmission within a home. For unusual conditions where more adequate sound deadening is required, the following drawings are submitted.)

Drawing No. 1 shows average partition with studs spaced 16" O.C., and with Fir-Tex applied to each side of the partition, either as Insulating Plaster Base Lath (see pages 4-5), or as Interior Finish (see pages 5-6), Building Board, Finish Plank and Tile, etc.). 2" x 4" top and bottom plates have been further cushioned by letting them rest on a narrow strip of ½" Fir-Tex Building Board just the width of the plate.

Drawing No. 2 shows 2" x 4" studding staggered on cushioned 2" x 6" top and bottom plates as illustrated. NOTE:—Here *each* wall area should be 16" O.C. which means the use of double the number of studding. This method is excellent procedure. It is so simple that it can be handled on any job, and does not greatly increase the cost. It will be found effective in silencing most of the usual problems.

Drawing No. 3 goes still further. Here cushioned 2" x 6" top and bottom plates, as illustrated, are used and for studding 2" x 2" or 2" x 4" are placed sideways and with each wall 16" O.C. In the space gained by using 2" studs is placed loosely a sheet of Fir-Tex Building Board. Each wall is then Fir-Texed either with Insulating Plaster Base Lath or Fir-Tex Interior Finish.

Drawing No. 4 shows normal joist construction in frame building where Fir-Tex Insulating plaster Base Lath and plaster or Fir-Tex Interior Finish has been applied to the underneath side of the joists making finished ceiling for the room below. Top side of the joists have been treated in either of two ways: (See next page.)



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1. 1st, wood sheathing sub flooring applied directly to joists and nailed securely; 2nd, Fir-Tex Building Board or Fir-Tex 3/8" Economy Board has been laid on top of sub floor and tacked lightly in place; 3rd, finish floor has been laid over Fir-Tex and nailed securely through the Fir-Tex into the wood sheathing, using nails of sufficient length to penetrate 1" into the wood member.
2. 1st, Fir-Tex Building Board or Fir-Tex 3/8" Economy Board has been laid over joists with edges centering over framing members and tacked lightly in place; 2nd, wood sheathing sub flooring has been laid over Fir-Tex and nailed securely through the Fir-Tex into the joists; 3rd, finish floor has been laid over the sub floor and nailed securely in place.

The first method is preferable in practically all cases.

Drawing No. 5 (see page 7) shows method commonly used to overcome unusual problems of sound transmission through floors. 1st, two sets of joists are used. One set, employed as floor joists, is hung in the usual manner 16" O.C. and bridged. The second set, employed as ceiling joists of the room below, is hung independently, staggered between the floor joists, and bridged. This construction of itself acts in the same manner as staggered studs and prevents sound being "telegraphed" from one room to the other. There must be no contact between the two sets of joists or bridging. The Fir-Tex treatment is as follows: Ceiling of room below—Fir-Tex is applied to underneath side of ceiling joists either as Fir-Tex Insulating Plaster Base Lath (see pages 4-5) or as Fir-Tex Interior Finish (see pages 5-6). Floor of room above — 1st, wood sheathing sub floor has been applied in the usual manner and nailed securely to the joists. 2nd, Fir-Tex Building Board or Economy Board in large sheets has been laid on top of the sub floor, sheets being spaced approximately 1/8" apart at ends and sides, and tacked lightly in place. Next 1" x 3" sound, dry wood furring strips or sleepers (such as 1" x 3" No. 1 Com. Dry Douglas Fir S1S to 3/4" or 25/32") of uniform thickness have been laid 16" O.C. on top of the Fir-Tex and nailed securely with nails spaced 48" apart and reaching through the sub floor. Last, the finish floor is laid in the usual manner directly to the sleepers.

Architects will be pleased with the results accomplished in the isolation of a room if they employ a combination of staggered stud walls and floating joists.

SOUND TRANSMISSION TESTS

Conducted by Vern O. Knudsen, Ph.D., Consultant on Acoustics

Frequency of Test Tone	Transmission Loss in Decibels	
	1/2" thick	1" thick
128 cycles	18.6	14.5
256 cycles	18.8	15.4
512 cycles	21.0	19.9
1024 cycles	24.2	27.8
2048 cycles	30.2	33.2
4096 cycles	28.4	32.6

SECTION IX

DECORATION OF FIR-TEX

FIR-TEX INTERIOR FINISH

Nail Heads: When it is planned to decorate the finished job of Fir-Tex Interior Finish with plastic paints, paints, or wall coverings, use ordinary galvanized shingle nails instead of finish nails. These nails are driven well home and permitted to "dimple." Using an ordinary putty knife, treat each head with Swedish putty or some prepared product such as Laux Insulation Joint Filler or Spackle. This material is pressed well into the crevices, smoothed off with putty knife, and permitted to dry thoroughly. The surface is then sanded level and true, using No. 1 sandpaper on wood block.

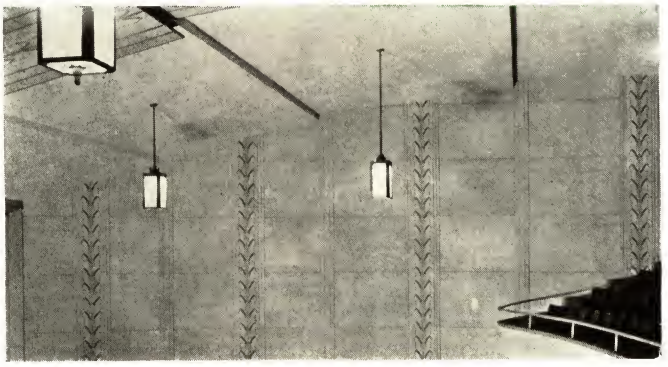
(CAUTION:—You will note that this treatment of nail heads is to be used *only* when the Fir-Tex Interior Finish is to be painted or covered and not when it is to be used in its natural finish.)

Joint Treatment: With coarse sandpaper rub down an area from 4 inches to 6 inches wide at the joints. Strip these joints with galvanized annealed wire mesh, 12 or 16 to the inch, bonding the screening to the Fir-Tex with bonding cement. The wire mesh should not be nailed or tacked in place except when starting a joint and occasionally on ceiling strips to hold in place while applying cement. Hold one end of strip while the bonding cement is applied to the surface of the wire and pressed through the mesh with a 4-inch painter's scraping knife. Spread the bonding cement beyond the edges of the screen for not less than 1 inch so that the edge of the wire cloth will not show through the plastic paint finish. In bonding the wire over the joints, press firmly against the Fir-Tex and fill mesh well with the bonding cement applied in the consistency of putty. Apply, similarly, a strip of wire cloth bent around all corners and re-entrant angles.

Cold Water Paints: The surface of Fir-Tex Interior Finish, particularly the surface of the Ivrykote finish, which sells for the same price as Neutral Tan Insulating Board, lends itself admirably to application of calcimines and cold water paints of all grades.

Recent developments in the casein base paint field have been so rapid and so highly successful that the use of these paints in preference to paints of other base and ordinary calcimines is increasing rapidly. There are many good casein base paints on the market today. Some of them are Laux Vello, Rayolite, Muraltone, Hylite, Luminall and Sunflex. For best results the paint is applied directly to the Ivrykote surface of Fir-Tex which has been factory sized and baked. Two coats produce a most pleasing result. Some painters will sand very lightly the first coat before applying the second, using a fine sandpaper, but this step may be omitted. These paints will be found very inexpensive and their coverage is highly satisfactory. One advantage is that successive coats may be applied many times when redecorating, without chipping or scaling.

Stains: In cases where it is desired to change the color but not the texture of the Fir-Tex, a glue stain may be employed. Glue stain is made by: 1st, dissolve 3/4 lb. of flake or ground glue in one pint cold water; 2nd, mix dry color with sufficient cold water to make a paste; 3rd, dilute the pint of glue with one gallon boiling water; 4th, add the color paste and stir till thoroughly mixed. This preparation should be applied while still warm. Mix only as much stain as will be used at one time. Try the stain on samples or scraps of Fir-Tex before applying it to actual job.



Oil or Varnish Paints: Fir-Tex Ivrykote is factory pre-sized. Neutral tan Fir-Tex must first be sized like ordinary insulation boards before treating with oil or varnish paints. Sandpaper lightly between coats for best results. We suggest that oil and varnish paints be used only when some special result is desired. Under all normal conditions casein paints will produce much more pleasing results as well as being less expensive.

Plastic Paints: The best plastic paints for use over Fir-Tex are casein base, such as Laux Blue Label Wall Texture. When mixed with cold water in accordance to manufacturer's recommendations, they form a thick paint which can be textured by manipulation of the brush, celluloid triangle, etc. When dry, this surface is given a coat of casein paint or other treatment. This work should be completed before application of mouldings or battens over the joints.

Wall Coverings: Fir-Tex Ivrykote presents the best surface for wall paper or other coverings. Its surface has been factory pre-sized and lends itself to a smooth, even job. The procedure is as follows:

1st. Apply Fir-Tex Building Board to framing members as in Section IV but using galvanized headed nails as in paragraph 1, this section.
2nd. Treat nail heads as in paragraph 1, this section.
3rd. Apply wall paper in usual manner making sure that you can locate all joints even after they are covered.
4th. Treat all joints in Fir-Tex with wood, metal or Fir-Tex mouldings or batten strips. Paint mouldings before they are applied rather than afterwards.

Stencils: Many interiors can be toned up and made more attractive by utilizing stencils, particularly on borders. Pleasing stencil patterns will be found in local paint or wall paper stores. They should be cut from oil paper (or metal, if used many times) and held in place by hand or with thumb tacks while the color is being applied. Colors ground in Japan are most satisfactory, thinned to the desired consistency with mixture of 6 parts turpentine, 3 parts linseed oil, 1 part Japan drier.

REFRIGERATION AND COLD STORAGE INSULATION

10
28

FIR-TEX "Z" REFRIGERATION INSULATION BLOCKS
FIR-TEX "ZV" REFRIGERATOR AND COLD STORAGE LOW TEMPERATURE INSULATION

Master Specifications

(NOTE:—No single specification can be adopted for general use. Each job must be analyzed before specific thicknesses can be recommended, due to different types of construction and thickness of the walls in the building in which Fir-Tex is to be used. For detailed information, write to the Engineering Dept., Fir-Tex Insulating Board Co., 1108 Porter Bldg., Portland, Ore. Give all the particulars in your possession, such as: building already constructed, or to be constructed; frame, tile, brick or concrete; number of stories; size, location and exposure of room or rooms in building, temperatures to be maintained; size and kind of ice machines.)

CONCRETE CONSTRUCTION

1. **Work Included:**
   (NOTE:—Here list and locate accurately the wall, floor and ceiling areas to be insulated, specifying in each instance the total thickness of Fir-Tex Insulation to be used and the number of layers in which it shall be applied.)
2. **Material:** Insulation shall be Fir-Tex ("Z" Refrigeration Insulation Blocks) ("ZV" Refrigerator and Cold Storage Low Temperature Insulation wrapped in vapor tight paper), (here specify) inches in thickness, and (12″ x 36″) (18″ x 36″) (24″ x 36″) (24″ x 48″) as best adapted to the particular area to be insulated.
3. **Cutting and Fitting:** All cutting and fitting shall be done in a neat workmanlike manner. Cutting shall be done with a sharp, fine tooth saw, using rapid strokes and a minimum of pressure.
   (NOTE:—When electricity is available, a portable power saw does an excellent job and speeds up the work.)
4. **Base:** All surfaces shall be thoroughly dry, smooth, clean, and free from grease or paint. All rough surfaces and hollows shall be trued up with waterproofed Portland Cement which shall be allowed to dry thoroughly before proceeding.
   (NOTE:—The above is for use in existing concrete buildings. When the architect is supervising the erection of the building as well as the insulation, he can control the entire problem. In such cases he will find the following suggestions helpful:
   a. All walls, floors and ceilings of area which is to be insulated, shall be poured with integrally waterproofed concrete.
   b. All surface areas shall be finished off smoothly to present an even surface for the application of Fir-Tex.
   c. In cases where the soil is other than sand and gravel, he will find the following good practice for the floor slab:
      (1) Spread 4″ of cinders or gravel over the area to be covered.
      (2) Pour 2″ of integrally waterproofed concrete over cinders or gravel.
   d. Be sure that all concrete is cured and thoroughly dry before permitting next step.
5. **Application Floor:**
   a. Entire floor area shall be sprayed with priming coat of cut-back asphalt (asphalt emulsion diluted with water).
   b. Floor area shall then be flooded with smoking hot asphalt, using 35 lbs. asphalt per 100 sq. ft. Only sufficient area to provide complete embedment of each Fir-Tex sheet being mopped at one time.
   c. Fir-Tex sheet shall then be firmly embedded in the hot asphalt, spacing sheets ⅛″ apart. Asphalt shall be thick enough on floor to squeeze up through joints.

   d. When entire floor area has been covered with Fit-Tex, successive layers shall be applied in same manner, each time flooding the exposed area of the preceding layer with 35 lbs. per 100 sq.ft. smoking hot asphalt, and then embedding Fir-Tex sheet, making sure that each layer be staggered to break all joints of preceding layer.
   e. When final layer has been embedded in the hot asphalt of preceding layer, all open joints shall be filled or calked with ground-up Fir-Tex fibre mixed with asphalt. Exposed area of this top layer shall then be flooded with two successive coats of smoking hot asphalt, using 25 lbs. of asphalt per 100 sq. ft. to each coat. When top layer has cooled, it shall be dusted with Portland Cement.
   f. Concrete finish floor: Three inches of integrally waterproofed cement shall next be poured on top of the finished Fir-Tex floor. This concrete shall be reinforced with (here specify gauge, size of mesh, etc.) metal reinforcing, care being taken that reinforcing be held at least 1″ off the floor.
   (NOTE:—This may be accomplished either through using self-furring mesh or by the applicator digging into the concrete (as it is poured) with the claws of his hammer and lifting the mesh until it is suspended in the mass of concrete.)
6. **Application—Walls and Ceiling:**
   a. Entire wall and ceiling area shall be sprayed with priming coat of cut-back asphalt (asphalt emulsion diluted with water).
   b. Using ice picks to hold the Fir-Tex sheet, totally submerge the sheet in smoking hot asphalt and apply to walls and ceiling. Each sheet shall be held firmly in place until asphalt has cooled enough to support the sheet. Sheets shall be spaced ⅛″ apart at sides and ends. Extreme care should be exercised that no air spaces form between wall and Fir-Tex or between successive layers of Fir-Tex. This is accomplished by sliding Fir-Tex into place.
      Start at top of wall and work down to avoid drippings of asphalt collecting on surfaces. Remove any drippings which may collect on concrete to avoid air spaces between Fir-Tex and concrete.
   c. Succeeding layers of Fir-Tex shall then be applied in the same manner, each sheet being dipped in the smoking hot asphalt and held in place by butcher skewers or galvanized nails. Sheets shall be spaced ⅛″ apart and staggered to break all joints of preceding layer.
   d. Exposed surface of last layer then shall be sprayed with smoking hot asphalt, using 25 lbs. of asphalt per 100 sq. ft.
   e. When thoroughly dry and cool, entire wall and ceiling area shall be:
      (1) sprayed with (one) (two) coats of (specify brand or quality) aluminum paint—or
      (2) trowelled with a coat of mastic.

SECTION XI

INSULATION OF FLAT DECKED ROOFS
(Of Steel, Concrete, Structural Gypsum or Unit Tile under Built-up Roofing)

FIR-TEX "R" ROOF INSULATION
FIR-TEX "RV" VAPOR-PROOF ROOF INSULATION
(NOTE:—Where high humidities are maintained, use vapor cut-off as in Section XII, No. 6A.)

1. **Work Included:**
   (NOTE:—Same as Master Specifications Section XII, No. 1.)
2. **Insulation Material:**
   (NOTE:—Same as Master Specifications Section XII, No. 2.)
3. **Wood Nailing Strips:**
   (NOTE:—Same as Master Specifications Section XII, No. 3.)
4. **Roof Deck:**
   a. General: The surface of the roof deck shall be thoroughly dry and broomed clean, free from dirt and loose material and all rough spots shall be removed. Where deck is of tile construction, the joints of all tiles shall be properly pointed up.
   b. Application:
      (1) Priming the Deck: Deck shall be thoroughly primed with cut back asphalt (asphalt emulsion diluted with water).
      (2) Mopping the Deck: Deck shall then be mopped with smoking hot asphalt, using 35 lbs. of asphalt to 100 sq. ft.
      (NOTE:—In tile construction, spot or strip mop the individual tiles or units.)
      Only sufficient area to provide complete embedment of each Fir-Tex sheet shall be mopped at one time. Each Fir-Tex sheet shall then be firmly embedded in the hot asphalt mopping. In the case of two layer insulation, the first layer shall be mopped in the same manner as the deck and the second layer then embedded in the hot mopping.

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INSULATION OF FLAT DECKED ROOFS
(Of Wood under Built-up Roofing)

FIR-TEX "R" ROOF INSULATION
FIR-TEX "RV" VAPOR-PROOF ROOF INSULATION

Master Specifications

1. **Work Included:**
(NOTE:—Here list and locate accurately the roof areas to be covered. If different thicknesses are required on some of the areas, list and locate each area separately.)

2. **Insulation Material:** Roof Insulation shall be (Fir-Tex "R" Roof Insulation) (Fir-Tex "RV" Vaporproof Roof Insulation) (½″) (1″) (1½″) (2″) thick, 22″ x 47″, with (square) (offset) edges, and laid in (one) (two) layer(s).

3. **Wood Nailing Strips:**
(NOTE:—Fir-Tex is not a nailing base. Therefore, wood strips, securely nailed or bolted, shall be provided to serve as adequate nailing base for all flashings, metal work, etc.) (Architect will here insert his instructions that this work be done before roofing crew comes on the job. This work is usually done by the general contractor.)

4. **General:** All Fir-Tex shall be kept dry before, during, and after its application. Only as much Fir-Tex shall be applied in any one day as will be covered by the finished roofing that same day. Fir-Tex sheets shall be laid in parallel courses, staggered to break joints, and shall be spaced ⅛″ apart at sides and ends. When applied in two layers, the Fir-Tex sheets in the second layer shall be laid parallel with those of first layer and staggered to break all joints. Where the roof meets vertical surfaces such as parapets, etc., the Fir-Tex sheets shall be cut and fitted snugly in a neat workmanlike manner, but never forced into place.

5. **Roof Deck:** The surface of the roof deck shall be thoroughly dry and shall be broomed clean and free from dirt and loose material. All loose or springy boards shall be securely nailed before Fir-Tex is applied.

6. **Building Paper:**
The entire roof area shall be covered with (rosin sized building paper) (6 lb. coated felt), lapped half, making two plies. Nail sufficiently to hold in place until the Fir-Tex is laid over it.

6A. **(alternate) Vapor Cut-off:**
(NOTE:—Use this clause only where high humidities are maintained and prevention of condensation is necessary.)

The entire roof area shall be covered with asphalt prepared roofing 34 lbs. per square and having one side coated. Lay coated side down and lapped half, making two plies. Nail the back edge of each sheet with tin capped, galvanized, barbed roofing nails spaced 12″ O.C. All laps shall be mopped back 12″ with hot asphalt. Do not mop over this membrane until just prior to the laying of the Fir-Tex.

7. **Application of Fir-Tex Roof Insulation:**
a. When laid in one layer over building paper—
(1) Nails shall be galvanized roofing nails with 5/16″ heads and of sufficient length to pass through Fir-Tex and penetrate at least 1″ into the roof deck, but in no case shall the nail penetrate entirely through the roof deck.
(2) Nailing: Each Fir-Tex sheet shall be secured in place by nails spaced 12″ apart along each edge and staggered along the longitudinal center line.
(3) Mopping: After Fir-Tex has been nailed in place, the exposed surface shall be mopped with smoking hot asphalt, using 35 lbs. of asphalt to 100 sq. ft., and the first layer of roofing felt shall be embedded in the asphalt while hot.

b. When laid in two layers—
(1) Nails shall be galvanized roofing nails with 5/16″ heads and of sufficient length to pass through both layers of Fir-Tex and penetrate at least 1″ into the roof deck, but in no case shall the nail penetrate entirely through the roof deck.
(2) Nailing shall be through the top layer only, spacing to be same as one layer method in 7. a. (2).

c. When laid in one layer over Vapor Cut-off—
The exposed area shall be mopped liberally with hot asphalt, only sufficient area to provide complete embedment of each Fir-Tex sheet being mopped at one time. The Fir-Tex sheet shall then be embedded firmly in the mopping while still hot.

d. When laid in two layers over Vapor Cut-off—
(1) First layer of Fir-Tex shall be applied as 7c. above.
(2) Exposed area of applied Fir-Tex shall then be mopped as before and second layer embedded.

e. Water Cut-offs—
NOTE:—Advocated to prevent the spread of water beyond predetermined isolated areas in the event of leaks due to damage to the roofing or defective flashings, parapet walls, copings, etc.

The insulation, whether laid in one (1) or two (2) layers, shall be cut to the line designated for the water cut-off.

Water cut-offs shall consist of strips of (coal tar pitch) (asphalt) saturated roofing felt 8″ to 10″ wide stuck in bitumen to the roof, carried over the edge of the insulation, and turned over and stuck in bitumen to the top surface of the insulation.

They shall be located approximately 24″ from and parallel to all vertical walls, such as parapets, penthouses, skylight curbs, etc., and around all leader heads, soil pipes, vents, ventilators, etc. The body or field of the roof shall be divided into rectangular areas approximately 30′ on a side, each area isolated with a water cut-off. Insert a water cut-off surrounding each day's work if the stop is not made at the designated water cut-off.

At least one (1) ply of the finished roofing shall be mopped to the water cut-off each night.

SECTION XIII

INSULATION OF PITCHED ROOFS OF FRAME BUILDINGS

FIR-TEX "B" BUILDING BOARD
FIR-TEX "F" FIRKOTE SHEATHING

Master Specifications

1. **Work Included:** (Here list and locate accurately the roof areas to be insulated.)

2. Insulation shall be Fir-Tex ("B"—½″ Building Board) ("B" —1″ Building Board) ("F"—25/32″ Firkote Sheathing).

3. **Framing:** Rafters shall be accurately spaced (specify) inches on centers.
(NOTE:—In many sections rafters are spaced 24″ O.C. even though studs, joists, etc. be spaced 16″ O.C.) Additional 2″ x 4″ headers or cross members shall be installed as may be required to serve as nailing base for all ends of Fir-Tex sheets.

4. **Application:** Large Fir-Tex sheets of lengths best adapted to cover area with fewest possible joints shall be applied directly to top of rafters, with all side and end joints centering over wood members, and nailed sufficiently to hold in place until wood roof sheathing or shingle lath has been applied.

5. **Shingle Lath:** Wood strips (specify) x (specify) inches of (specify) grade shall be applied directly over the Fir-Tex, spaced (inches O.C.) (to conform with shingle units), and nailed securely through the Fir-Tex and into the wood members with nails of sufficient length to penetrate at least 1″ into the wood member. All ends of Fir-Tex sheets shall be nailed securely to cross member over which they center, this nailing to be done through the shingle lath when lath spacing coincides with Fir-Tex joint, or otherwise directly through the Fir-Tex.

6. **Shingles:** Shingles shall be applied directly to shingle lath as in usual practice.
(NOTE:—The above specifications cover the normal pitched roof of frame building under wood shingles. If rigid asbestos shingles, slate or tile roofing is used, a continuous course of good quality waterproof felt, well lapped, shall be applied over the Fir-Tex and under the wood strips. If composition roofing or asphalt shingles are used, a solid base of D & M wood sheathing shall be substituted for the wood strips and the waterproof felt applied over the sheathing.)

ADVANTAGES OF FIR-TEX SEMI-RIGID INSULATION BOARD OVER OTHER TYPES OF INSULATION

1. Greater strength.
2. Once in place, always in place. Fir-Tex is an integral part of home. In case of alteration or repairs when opening is made in ceilings and sidewalls, there is no trickle of Fir-Tex because Fir-Tex is a building *board*.
3. Fir-Tex does not creep or settle. Fir-Tex is nailed solidly to framing members and is a permanent part of the building and remains where put. Vibrations caused by trucks and street cars, etc., have no settling effect on Fir-Tex insulation board.
4. With Fir-Tex there are no spaces for moths or other insects to crawl through and make their nests.
5. Fir-Tex sheets being semi-rigid are easy and clean to handle. One man can lift and apply a large sheet because it will support its own weight while being nailed.
6. Fir-Tex provides an unbroken area of uniform insulation continuity. This is particularly true when Fir-Tex is used as a plaster base as the mechanic necessarily must insulate from floor to ceiling and from eave to eave.
7. In most cases, Fir-Tex takes the place of some other building material and provides both insulation and building material at the cost of insulation alone. This also eliminates one cost of application.

TESTS

Sound transmission tests of Fir-Tex are given on page 8; sound absorption tests on page 7. Below are results of other important tests made September 21, 1937, by Robert W. Hunt Company, Engineers, Chicago, Illinois. Additional information may be obtained by writing the Engineering Department, Fir-Tex Insulating Board Co., Inc., 1108 Porter Bldg., Portland, Oregon.

TENSILE TESTS

	½″ Building Board Average thickness 0.491″		1″ Building Board 13-lb. Material Average thickness 0.982″	
	Longitudinal	Crosswise	Longitudinal	Crosswise
Tensile Strength Lbs. per square in.	232 247 235	251 244 236	46 45 48	42 43 46
Average	238	244	46.3	43.7
Average of three longitudinal and three crosswise tests	241		45.0	

THERMAL CONDUCTIVITY TEST

Guarded hot plate method, oven dried specimen

	½″ Building Board	1″ Building Board 13-lb. Material
Mean Temperature—°F.	75	75
Thickness—Inches	0.490	0.975
Density—Lb. per cu. ft.	15.5	12.3
Conductivity—B.t.u. per hour per sq. ft. per degree. F. difference in temperature	0.654	0.305
Conductivity calculated to a 1″ thickness	0.320	0.298

LINEAR EXPANSION

Expansion in changing from 50% to 97% relative humidity.

	½″ Building Board			1″ Building Board 13-lb. Material		
	Longitudinal	Crosswise	Average	Longitudinal	Crosswise	Average
% elongation in 10″	0.20	0.25	0.22	0.10	0.15	0.125

ABSORPTION TEST

Dried at 160° F. for 24 hours, 2 hours immersion in water at 70° F.

	½″ Building Board	1″ Building Board 13-lb. Material
% absorption by volume	4.7	3.4

TRANSVERSE TESTS

Specimens 3″ wide by 18″ long, supported on 12″ span, load concentrated at mid-span.

	½″ Building Board		1″ Building Board 13-lb. Material	
	Longitudinal	Crosswise	Longitudinal	Crosswise
Maximum load—lbs.	14.8 14.2 14.2	12.6 12.8 12.2	17.2 18.2 18.8	17.0 16.6 18.4
Average	14.4	12.5	18.1	17.3
Average of three longitudinal and three crosswise tests	13.5		17.7	
Maximum deflection—inches	0.65 0.75 0.80	0.90 0.90 1.00	0.45 0.50 0.50	0.50 0.45 0.55
Average	0.73	0.93	0.48	0.50
Average of three longitudinal and three crosswise tests	0.83		0.49	

FIR-TEX

FIR-TEX

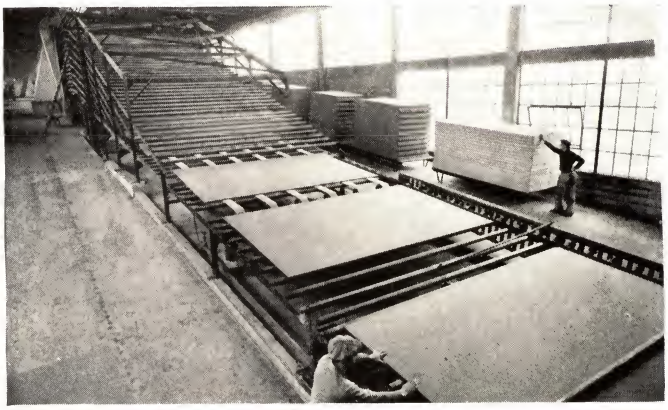
NATURE'S GIFT FROM THE GREAT NORTHWEST WOODS

Fir-Tex is made in the heart of the great lumber producing country of the Northwest. Here are trees that have taken hundreds of years to grow. Fir-Tex shreds the sound strong wood and interlaces the fibres to produce an insulating board with millions of air cells per square inch of the material. These myriad air cells are what gives such tremendous insulating properties to Fir-Tex.

There are other fine insulating boards but none equal Fir-Tex for insulating value, for strength, for durability. Fir-Tex superiority is due to:

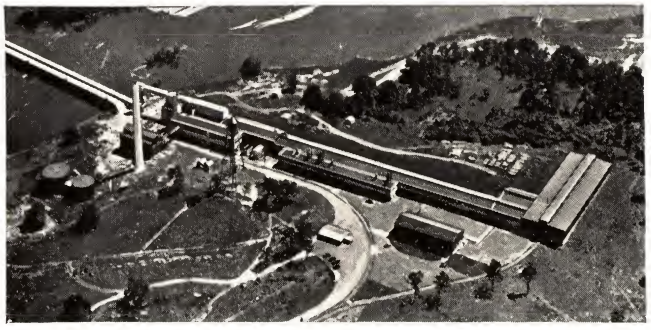
1. Fir-Tex is all wood, made from sound wood fibres in the natural fibre length.
2. Each individual fibre is thoroughly sterilized and waterproofed in the manufacturing process so there is no tendency in the finished product for dry rot to set in or the growth of fungus to develop or for the fibres to provide or harbor food for insects or vermin.
3. In no instance has the physical color been obtained by the introduction of any chemical or extraneous matter. The light tan color results from the removal of the natural tannic acids and resins. On the Fir-Tex boards used for interior finish, the beautiful Ivrykote finish is applied at the plant by coating the surface with the highest quality casein paint. The Ivrykote surface is glazed and can be washed many times without discoloration.

Fir-Tex is made by the Fir-Tex Insulating Board Company in a $2,500,000 plant located on the Columbia River near St. Helens, Oregon. The product is distributed throughout the United States and many foreign countries by Dant & Russell, Inc., Portland, Oregon, through following:



After the wood fibres are sterilized, felted and pressed into boards, they emerge from a battery of dry kilns, ready for shipment to all world markets.

Warehouse at the plant, St. Helens, Oregon.



$2,500,000 plant of the Fir-Tex Insulating Board Company, St. Helens, Oregon.

Sales Representatives

FIR-TEX OF WASHINGTON
1171 Smith Tower
Seattle, Washington

FIR-TEX OF SO. CALIFORNIA
1515 East Seventh Street
Los Angeles, California

FIR-TEX OF NO. CALIFORNIA
324 Sheldon Building
San Francisco, California

MORRISON-MERRILL & COMPANY
Salt Lake City, Utah

FIR-TEX OF COLORADO
412 Denham Building
Denver, Colorado

FIR-TEX OF MISSOURI-KANSAS
1805 Grand Avenue
Kansas City, Missouri

J. E. SCHWARZ
Roosevelt Building
St. Louis, Missouri

FIR-TEX OF MICHIGAN
439 Penobscot Building
Detroit, Michigan

FIR-TEX OF GEORGIA
Arcade Building
Atlanta, Georgia

FIR-TEX OF ILLINOIS
333 North Michigan Avenue
Chicago, Illinois

FIR-TEX SALES CO.
P. O. Box 1790
Birmingham, Alabama

FIR-TEX OF MARYLAND
506 South Central Avenue
Baltimore, Maryland

FIR-TEX OF MINNESOTA
702 Vandalia Street
St. Paul, Minnesota

FIR-TEX OF NEW JERSEY
214 North Clinton Street
East Orange, New Jersey

CHARLES W. CALEY
144 E. 36th Street
New York, New York

FIR-TEX OF NEW YORK
North Tonawanda, New York

BUILDING MATERIAL
WHOLESALERS, INC.
510 Rutherford Avenue
Charlestown, Massachusetts

FIR-TEX OF FLORIDA
Fort Lauderdale, Florida

FIR-TEX INSULATING BOARD COMPANY

DANT & RUSSELL, INC.

NATIONAL DISTRIBUTORS **PORTLAND, OREGON**

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THE FLINTKOTE COMPANY

50 West 50th Street, NEW YORK, N. Y.

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ATLANTA, GA., 1215 Sylvan Road, S. W.
BOSTON, MASS., 826 Park Square Bldg.
CHICAGO, ILL., 624 So. Michigan Ave.
DETROIT, MICH., 14201 Schaefer Highway
NEW ORLEANS, LA., Poland and Galvez Sts.
WACO, TEX., 402 Superior Life Bldg.

PIONEER DIVISION—LOS ANGELES, CAL.

For Flintkote Asphalt and Asbestos Shingles and Sidings, Roll and Built-up Roofings, Rock Wool Insulation and Asphalt Emulsions, see File Index

FLINTKOTE INSULATION BOARD

CHARACTERISTICS

Flintkote Insulation Board (Cane-ite) is a rigid insulation made from 100% pure cane fibre firmly felted into a solid sheet. It is a light natural cane color. An ivory finish is also available on certain products. (See table.) The thermal conductivity of rigid insulation for computation purposes as shown in the "Guide" of the A. S. H. V. E. is .33 B.t.u.'s per hour, per square foot, per degree difference in temperature Fahrenheit, per inch thickness. All Flintkote Insulation Board is made termiteproof by an exclusive process, and is also treated to prevent dry rot decay. Available in a variety of forms especially cut to size for different purposes, its uses may be divided generally into two classes:—Structural and Non-structural (interior finishes, etc.).

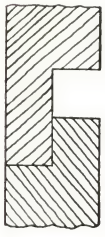
STRUCTURAL USES

Insulating Sheathing

Use—Flintkote Building Board in the large size sheets is especially suitable for use as a sheathing of sidewalls or sloping roofs.

Sizes—Available in 4 ft. widths (to fit standard stud spacing), 6, 7, 8, 9, 10 and 12-ft. lengths and ½, ¾ and 1-in. thicknesses.

Application—When used as a sheathing, Building Board is easily cut with a saw to fit various conditions encountered, and nailed directly to stud framing members. However, it should not be used as a nailing base. Shingles should be applied to furring strips nailed over the Insulation Board.



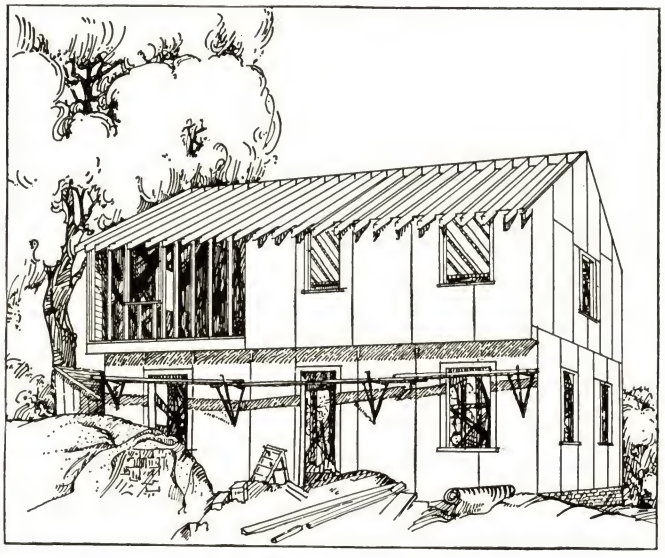
Horizontal Lath Joint

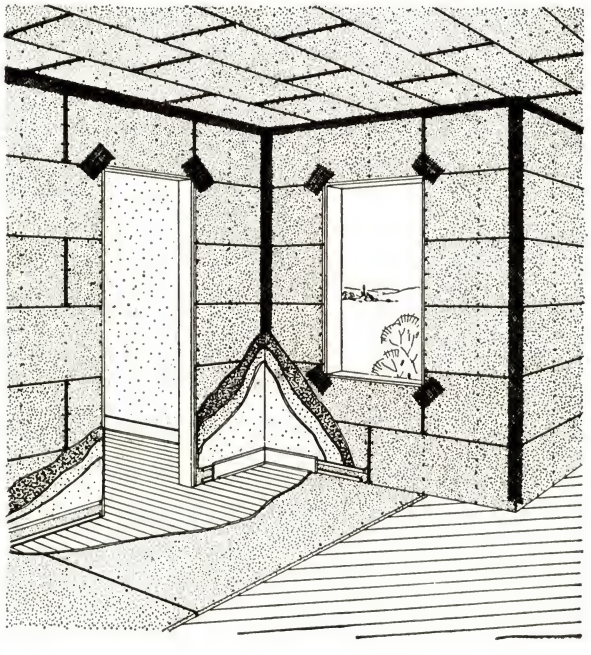
Insulating Lath

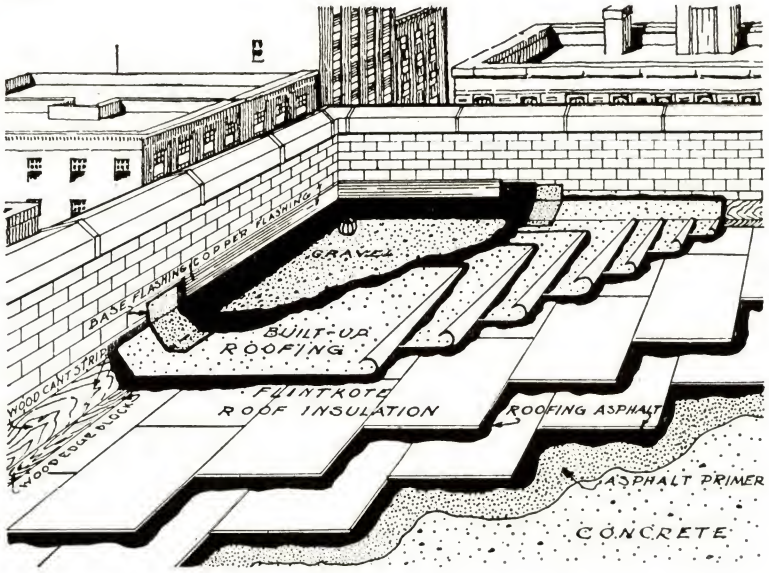
Uses—Insulating Lath is available in small size units with special joints to provide reinforcing plaster keys. It provides an excellent plaster base in addition to insulation.

Sizes—Insulating Lath is available in standard size of 18 x 48 in. in ½ and ¾-in. thicknesses.

Application—Insulating Lath should be kept dry at all times, and applied with long edges at right angles to vertical studs and joists, with joints staggered in thirds. Standard gypsum or wood fibre plaster should be used on scratch or brown coats and a minimum thickness of ½-in. plaster should be maintained at all points.







Built-up Roof Insulation

Uses—Roof Insulation is intended for use as insulation under built-up roofing only.

Sizes—Available in 22-in. width and 47-in. length in ½, 1, 1½ and 2-in. thicknesses.

Application—Roof Insulation may be applied over wood, gypsum, or concrete decks, either with nails or with asphalt on flat decks. It should be kept dry at all times and no more insulation should be applied at one time than can be covered in that same day with roofing felts and asphalt.

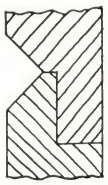
INTERIOR FINISH

Four types of Flintkote Insulation Board Products (Cane-ite) are available for use in finishing interiors: (1) Building Board, (2) Insulating Tile, (3) Insulating Plank, (4) Batten Strips.

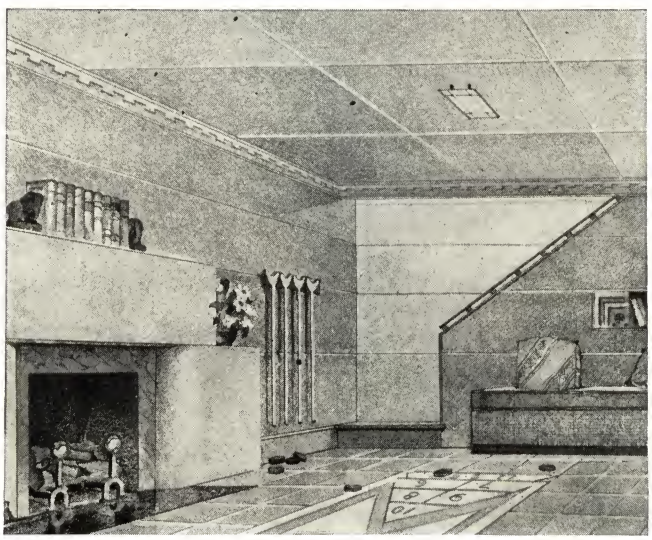
Building Board

Building Board is available with square edges in large sheets 4 ft. wide and in lengths from 6 to 12 ft. These may be easily applied for interior finish and are suitable for basements, attics, temporary buildings, stores, restaurants, etc. Joints may be covered with batten strips or beveled, providing a "V" cut to accent the joint. Patterns of almost any kind may be cut in the surface to give special decorative effects. The Stanley Fibre Board Cutter No. 193A is especially adapted for this purpose. Building Board may be applied to any surface or frame that will receive and hold nails. All joints, chair rails, mouldings, etc. must be backed by solid framing members. Building Board may be used in combination with tile or plank. See illustrations below.

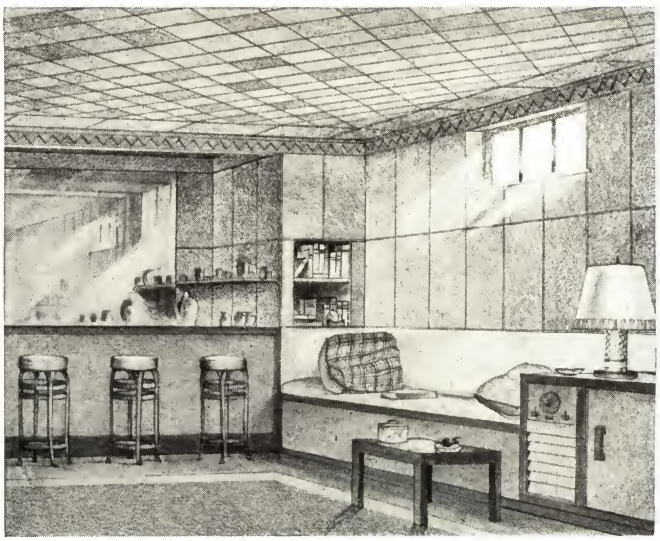
Insulating Tile



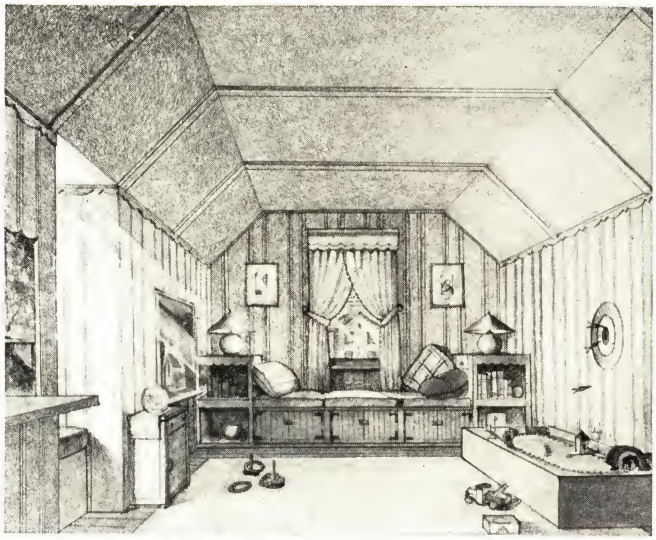
Tile are especially cut shapes of Insulation Board (square, or double square rectangles). They are provided with a precut bevel and shiplap joint to insure a clean, neat job. The cross section at the right shows the type of joint furnished on this product. The various square and rectangular shapes in different sizes may be applied to give a multiplicity of patterns, either rectangular or diagonal, such as basket weave, etc. Tile may be applied directly to any solid base either by means of nails or adhesives (where it is undesirable to show nails). The drawings below illustrate some of the uses of tile, plank, etc. For sizes see the table on the following page.



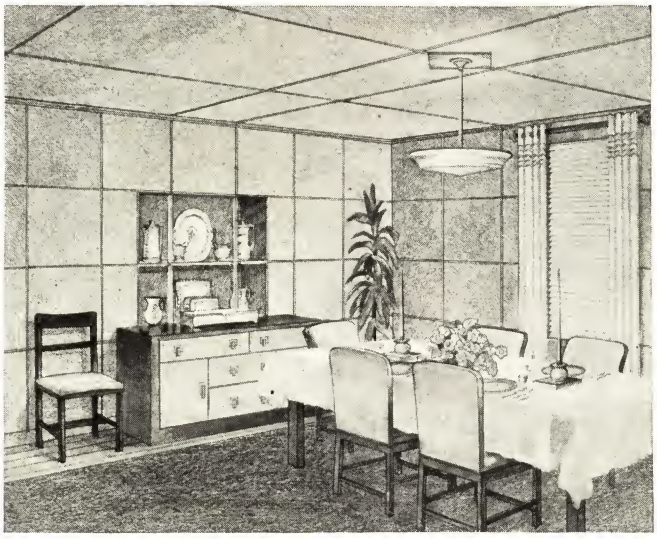
Above basement has been remodeled with Flintkote Building Board. Walls are finished with 4x8-ft. sheets scored with a "V" cut down the middle and applied horizontally. The ceiling is also covered with 4x8-ft. board grooved in 4-ft. squares.



Above shows a basement with walls covered with 12x24-in. Insulating Tile. On the ceiling 12x12-in. Tile are applied in a diagonal pattern with a border of 12x24-in. tiles. Ornamental treatment of the frieze is made from waste pieces.



In above room ceiling is decorated with 4 x 8-ft. Building Board and joints covered with Batten Strips. Insulating Plank in random widths covers sidewalls of this attic. Decorative trim is made from odd pieces left over from walls and ceilings.



Walls in the dining room above are finished with 24 x 24-in. Insulating Tile and the ceiling is finished with large size sheets of Building Board scored with a "V" cut to correspond and blend with the joints in the wall tile.

Insulating Plank

Insulating Plank is precut from Insulation Board in narrow widths from 6 to 16 in. and lengths from 8 to 12 ft. and may be used on walls or ceilings where the effect of lines close together in the design is desirable. Insulating Plank may be used in uniform or random widths and can be applied vertically or horizontally as desired, to any solid backing with nails or adhesives.

Batten Strips

Batten Strips are cut in 1¾ and 2½-in. widths from insulation board and are intended primarily to cover joints. They are also used for mouldings when desired. Batten Strips are applied over insulation board and must be nailed through to a solid framing base since insulation board cannot be used as a nailing base.

HardBoard

Flintkote HardBoard Products are dense wall boards made of compressed wood chips. They are suitable for use any place where large size sheets are required. Six standard grades are available: (1) Flintboard, (2) De Luxe Flintboard, (3) HardBoard, (4) Tempered HardBoard, (5) Black Tempered HardBoard, (6) Flintile.

PRODUCT DATA—FLINTKOTE INSULATION BOARD*

Product	Sizes	Thickness	Color	Joint
Building Board and Insulating Sheathing	4 ft. x 6 ft. 4 ft. x 7 ft. 4 ft. x 8 ft. 4 ft. x 9 ft. 4 ft. x 10 ft. 4 ft. x 12 ft.	½ in. ½ in., ¾ in., 1 in. ½ in., ¾ in., 1 in. ½ in., ¾ in., 1 in. ½ in., ¾ in., 1 in. ½ in., ¾ in., 1 in.	Natural finish Ivory finish (½ in. thickness only)	Square Edge
Insulating Lath	18 in. x 48 in.	½ in., ¾ in.	Natural finish	Shiplap
Roof Insulation	22 in. x 47 in.	½ in., 1 in. 1½ in., 2 in.	Natural finish	Square edge in all sizes. Offset edge in 1-in. thickness only
Insulating Tile	12 in. x 12 in. 12 in. x 24 in. 24 in. x 24 in. 24 in. x 48 in. 16 in. x 16 in. 16 in. x 32 in. 18 in. x 48 in.	½ in. ½ in. ½ in. ½ in. ½ in. ½ in. ½ in.	Natural finish Ivory finish	Bevel Shiplap
Insulating Plank	6 in. x 8 ft., 10 ft., 12 ft. 8 in. x 8 ft., 10 ft., 12 ft. 10 in. x 8 ft., 10 ft., 12 ft. 12 in. x 8 ft., 10 ft., 12 ft. 16 in. x 8 ft., 10 ft., 12 ft.	½ in. ½ in. ½ in. ½ in. ½ in.	Natural finish Ivory finish	Bevel Shiplap
Batten Strip	1¾ in. x 8 ft., 10 ft. 2½ in. x 8 ft., 10 ft.	½ in. ½ in.	Natural finish Ivory finish	Bevel Edge

*Subject to change without notice.

MEMORANDA

HOMASOTE COMPANY

Manufacturers of Quality Products Since 1909

TRENTON, N. J.

HOMASOTE

REG. U.S. PAT. OFF.

THE ALL-WEATHER ALL-PURPOSE BUILDING BOARD

Homasote
$\frac{13}{32}$ in. thickness and up to 8 ft. x 14 ft.

Homasote is a weatherproof insulating board, combining unusual structural strength, resistance to air infiltration and definite sound-deadening qualities. While not a fireproof material, it does not readily carry a flame and can be considered as slow-burning. A particular feature of Homasote is its homogeneous composition with no laminations to lift, separate or peel off. It contains from 33% to 56% more material than the average building board; is exceptionally strong and durable, and yet flexible enough to permit considerable curvature without breaking. This quality eliminates the losses often suffered in transportation or application. The large size sheets in which it is made (up to 8x14 ft.), combined with its weatherability and strength, make it especially useful for both exterior and interior surfacing of walls. The size of the sheets also eliminates the necessity of the usual batten strips used with other insulating boards, thereby providing an ideal base for wallpaper or paint.

The color and surface texture of Homasote is such that it may be used for room interiors, with no further finish. However, where it is desired to have them colored, Homasote presents an excellent surface for finishing with water, oil, plastic, or textural paints due to the surfacing characteristics which provide excellent bonding tendencies for the first coat, and a firm base for succeeding coats.

In addition to the above mentioned uses, the strength, weather-resistance and durability of Homasote make it an ideal medium for sheathing as it eliminates the necessity of using building paper.

Unusual Sizes

8x14, 8x10, 8x12, and 6x12 ft.
4x14, 4x9, 4x12, 4x8 and 4x10 ft.

Extra Large Sheets — The oversize panels in which Homasote is supplied is a feature of particular interest to designers and builders of small modern homes. When used for walls and ceilings for this purpose the 8x14 and 8x12 ft. pieces will, in average instances, cover the entire wall area and eliminate the usual unsightly seams, "latticing", or cracking of wall paper at joints. Hand labor necessitated by filling and smoothing joints is thus minimized, less nailing and less handling are required, resulting in greater speed in erection and wall finishing. The completed job is permanently crack-free; *there is no maintenance cost for walls and ceilings injured by settling.*

Homasote at Home in Trenton Yards
Protection from the elements unnecessary

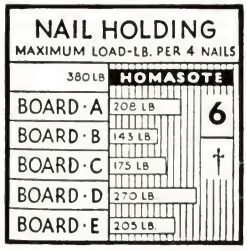
Insulating Qualities

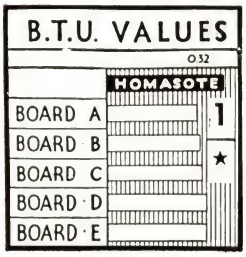
Proven by Laboratory Tests

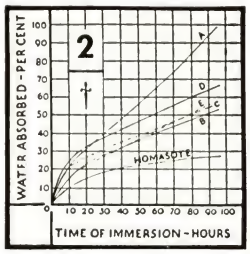
The insulating value of a material depends on a combination of three factors: B.t.u. rating, resistance to absorption of moisture, and air infiltration. The comparative charts below explain the reasons why Homasote is a superior insulating product.

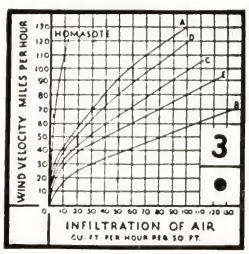
Insulating Qualities—(B.t.u. Values)—see chart No. 1.
High Moisture Resistance—see chart No. 2.
Resistance to Air Infiltration—see chart No. 3.
Tensile Strength—see chart No. 4.
Transverse Strength—see chart No. 5.
Nail Holding—see chart No. 6.

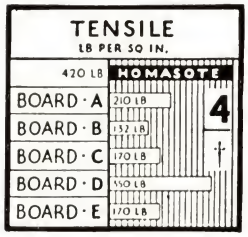
*Tests made by J. C. Peebles, Armour Institute of Technology, Chicago.
†Test made by Robert W. Hunt Co., Chicago.
•Test made by Lewis Institute, Chicago.
Complete information concerning these tests promptly mailed on request.

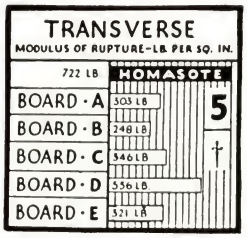






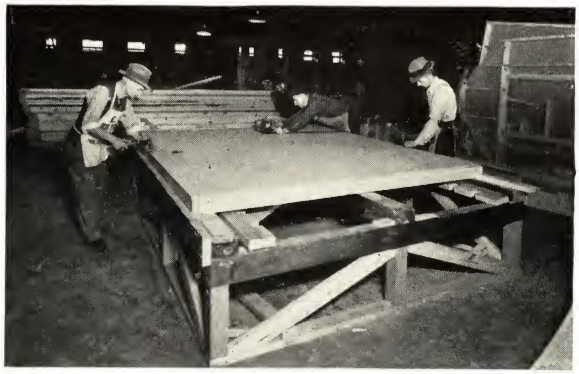






In the shop: "Precision-Built" houses begin in the local mill, where all lumber is precut.

Fabrication of wall and partition units are framed from working drawings, doors and windows integral.



To both sides of units Homasote is fixed by means of special glue, special nails.

On the job: Foundations are put in, precut joists set in place.

PRECISION-BUILT HOMES

Any Type or Size—At Lower Cost—In 30 Days

Architects and builders have long felt the need for a system of construction that would involve the use of standard parts and standard details, and yet be sufficiently flexible to be readily adapted to any design and price range.

By the Precision-Built (trade-marked) system of construction this need has been achieved; it is no longer an experiment. And—vitally important—the merchandising plan ties together in a profitable, co-operative endeavor—the architect, the contractor, the lumber dealer and the realtor. "Precision-Built" stands for a thoroughly modern housing program, distributed through the established factors in the building field.

How It Is Done

The Precision-Built system of construction provides the basic economies which have been expected from prefabrication. But, the Precision-Built home—no matter how large or how small—is built to individual design, conventional in appearance, strictly conforming to the type of architecture elected. And—because of Homasote being used on both sides of all walls it is *doubly insulated, weatherproofed and structurally stronger.*

The Precision-Built home first begins to take shape in the lumber dealer's mill, or a shop adjacent to it. There the wall and partition sections are built complete on a jig, joists and rafters are cut to size—accurately cut in a shop where precision work is the invariable rule. Every joint in the house will be a tight, sturdy joint, because it was cut by an accurate machine. The framing lumber in the walls is protected from the weather and kept dry, thus preventing shrinkage.

Meantime, the excavation has been completed and the foundations built. Now all the materials and the completed wall sections move to the location. Because of the work done in the shop, the house is completely enclosed and ready for heat—the second day. If weather conditions do not retard the excavation work, the Precision-Built home may be built any month of the year. Within 30 days it is ready for occupancy. No plastering is required, the walls and ceilings are erected dry, ready for occupancy. Because of the extreme flexibility of Homasote, it is possible for the architect to plan and execute circular or semi-circular rooms, also curved ceilings, demonstrating that ordinary limitations of design, inherent in older prefabrication systems, have been successfully eliminated in the Precision-Built method.

2 hours' labor sees all partitions up, job ready for roof framing with precut rafters.

When finished a P-B house looks like any other. Only the cost-sheet indicates savings.

PRECISION-BUILT SIMPLIFIED METHOD OF PLANNING

The Architect Has Business Created for Him, Handles Low-Cost Homes Profitably, Saves Drafting and Supervision Time

In order that the architect might employ Precision-Built methods—without radical departure from the usual practices—the Simplified Method of Planning was devised. This is made available in a set of compact, convenient charts and reference tables. The net result of its use is that the architect saves his own drafting time and still gives the contractor more detailed specifications than ever before. The basis of this planning method is a modular system—horizontal only—employing the one thoroughly workable module yet designed. Regardless of the size or type of construction, the architect will never be asked to modify any over-all dimensions by more than 2 in. The module imposes no limitations; there is complete flexibility of design. Combined with a special graph paper laid out in units of the module—and with the diagrams and reference tables covering every detail of flooring, joists, rafters, doors and windows—the Simplified Method of Planning neither violates nor amends any established practices; it is a joy to use. Obviously it cannot be described in detail here. We will gladly send the complete system—without charge—at the architect's request. Its many advantages will be recognized at first sight.

A Service for the Architect

For a small charge, the architect may send his floor plans, and elevations to the Homasote Company and have all the detailing done for him. Or—at no charge—he may send in his own Precision-Built detailing to be checked by us. On large scale projects, we will be glad to send our own detail men to work on the architect's board. Finally, at the architect's option, his plans (floor plans and one elevation) will be syndicated nationally. Whenever a prospective home owner wants to use a plan thus syndicated, the architect receives his predetermined fee for the complete details.

Any Type or Size of House

Precision-Built construction is adaptable to any size or type of wood frame building. The exterior finish may be of our own sand finish formula (resembling stucco and more enduring) or of brick veneer, stone veneer, patented sidings, clapboards or shingles. Our Sand Finish formula may be obtained free on request.

Important Features of a Precision-Built Home

(1) Fine quality materials are used throughout, but the process makes them cost less. (2) A Homasote Insulated home is economical to heat. (3) The Home can be built in 30 days . . . no waiting for months to occupy. (4) No time is lost from bad weather; the house can be under roof in two days, thus protecting the lumber from saturation in the event of continued rain. (5) No waiting for plaster to dry. (6) No cracking of wall, resulting in increased maintenance costs. (7) All walls are ready for any type of decorating without further expensive preparation.

(8) P-B homes are eligible for F.H.A. loans.

Write for bulletins and complete information.

PANELYZED INSULATION

For Walls, Ceilings, Wainscoting, Exterior Siding

Panelyzed Insulation is Homasote in another attractive form. It combines the structural strength, insulating qualities and other features of Homasote with the beauty of natural wood grains.

The panels are cast in moulds made from actual wood, each model having been selected for its particular beauty and interest. Knots, kerf marks and the entire grain are faithfully reproduced. On the walls its authenticity is never questioned. Rooms may be beautifully paneled and insulated at the same time. As vertical siding on the exterior, it provides not only the exterior covering for the building, but also the insulation. Panelyzed Insulation costs less than wood vertical siding. It comes in 16, 32 and 48 in. widths to fit the studding and eliminate blocking. Combined with Homasote's weatherproof properties, it is probably the cheapest form of exterior treatment for houses.

In colors, you have the choice of Pine-Tone, Silver Gray, Old English Light and Old English Dark—or a natural finish which can be stained to approximate almost any tone desired. By employing the three different widths, 16, 32 and 48 in. and up-ending alternate panels, repeats need never occur.

Panelyzed Insulation is applied to the studs with Sote Glue and 4d finishing nails—may also be applied over old plaster.

Assortment of Sizes

Panelyzed Insulation is packed in two assortments of sizes. Package No. 1 contains 2 panels 48 in., 2 panels 32 in. and 2 panels 16 in. Package No. 2 contains 4 panels 32 in. and 4 panels 16 in. Lengths 8 ft. and 8 ft. 6 in. Be sure to specify lengths desired.

Instructions for Finishing Natural Panelyzed

For Interior—First brush on ground coat of casein water paint to desired color. Then brush or spray coat of white shellac, using a 4½-lb. cut shellac and re-cutting same with 50% of alcohol. Third, rub on oil stain to color required with a clean rag and allow to stand for a few minutes before wiping off, to get the desired relief effect. Fourth, if an exceptionally high class job is required, give the panels a spray coat of a flat lacquer after staining.

For Exterior—First brush on two coats of outside white paint (lead and oil) for the Pine-Tone and Silver Gray and cream color for the Old English Light and Old English Dark. The two coats should be applied 24 hours apart and followed with a coat of oil stain. Then the stain should be wiped off to give the desired effect.

THERMASOTE AND THERMASOTE SHEATHING

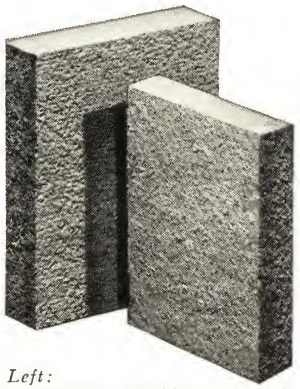
Double Insulation

Thermasote provides extra insulation where it is required. It combines, on the whole, the major characteristics of Homasote, plus additional insulating values. It is designed for use on either interior or exterior wall surfaces.

Sizes—4x4, 4x5, 4x6, 4x7, 4x8, 4x9, 4x10, 4x12 and 4x14 ft.

6x8, 7x8, 8x8, 8x12 and 8x14 ft. furnished on special order.

Thicknesses—¾, 1, 1½, 2, 2½, 3, 3½ and 4 in.



Left:
Thermasote (Double Insulation) 1-In. Thickness
Right:
Thermasote Sheathing, $\frac{25}{32}$-In. Thickness

Thermasote Sheathing

Thermasote $\frac{25}{32}$-in. Sheathing is the real answer to the sheathing problem because:

(1) It provides the best insulation, highest resistance to air infiltration.

(2) It comes in large sizes 6x8, 7x8, 8x8, 8x12 and 8x14 ft. reducing application costs, eliminating joints.

(3) Absolutely weatherproof, backed by 20 years' exposure—no need for asphalt coatings.

(4) Stronger than diagonal wood sheathing and other insulations.

OTHER "SOTE" PRODUCTS

Sand Finish—Presents a beautiful stucco-like appearance for either interior or exterior surfaces. Will not crack, check or peel off. Has been used on exterior for 20 years without need for redecorating. Any color may be had. Applied with a brush.

Vehisote—A dense, rigid board that can be tooled or bent to moderate curvatures. Unsurpassed for all types of interior paneling.

Suede Finish—For beautiful interiors and window trim. Soft, velvety effects in bright colors or pastel shades.

Booklet

A new 32-page booklet of Homasote Products showing uses, application instructions and prices will be sent free on request.

INSULITE

TRUCTURAL
INSULATION

INSULITE
STRUCTURAL INSULATION BOARD
Made by
THE INSULITE COMPANY
Minneapolis, Minnesota

Mills: International Falls, Minnesota *and* Karhula, Finland

THE COMPANY—EXPERIENCE AND FACILITIES

EXPERIENCE—Insulite, the original structural wood fiber insulating board, has been made and marketed for more than 20 years. Experience gained through constant observation of actual installations of Insulite Products during this period, coupled with exhaustive laboratory research work, assures dependable and comprehensive information on the practical applications of Insulite in its various forms. This background of many years of practical experience offers the ultimate consumer of Insulite Products an unsurpassed service and protection.

MANUFACTURING FACILITIES—A thoroughly modern plant capable of producing 300,000,000 sq. ft. per year assures an ample supply of material at all times. Special machines designed by the Engineering Department of THE INSULITE COMPANY makes possible the fabrication of special insulation items required in the industrial field. These special machines provide finished insulation units to fit practically any need at exceptionally low cost.

DISTRIBUTION—Insulite Products are distributed nationally through retail lumber dealers who maintain large stocks for immediate delivery. To facilitate shipping and handling without injury, these materials are neatly and securely packaged in strong, easily handled bundles. This service assures delivery to the job in the same condition as when the materials leave the mills.

Insulite Products are carried by dealers throughout the world.

SERVICE—THE INSULITE CO. maintains at its various offices a Service Department personneled with experienced Insulation Engineers. Competent representatives and service men are available in all principal cities. The Company tenders its full cooperation and service facilities to architects in the solution of insulation problems.

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ALSO MANUFACTURERS OF ACOUSTICAL MATERIAL

INSULITE MANUFACTURING PROCESS

Insulite Structural Insulation is made from the tough, durable fibers of northern woods. The wood is reduced to fiber by the cold grinding process which assures not only the retention of the natural protective gums inherent in the wood and the full strength of the fiber but the natural attractive light color of clean, fresh wood as well.

The fibers are first subjected to a chemical treatment which renders the finished product moisture-resistant. The formation of the fiber into structural sheets is accomplished by a felting process developed to give maximum strength and heat resistance through the proper interlacing of the fiber which seals in millions of minute air cells.

PHYSICAL CHARACTERISTICS

TESTS—All test data, the results only of which are here given, are substantiated by complete reports verified by competent laboratory sources. Copies of complete test data will be furnished on request to those interested.

LOW THERMAL CONDUCTIVITY—The conductivity of standard Insulite structural insulation products is .33 B.t.u.'s per sq. ft., per inch thick, per hour, per degree F. (Bureau of Standard's test of 16.9 lb. density Insulite.)

TENSILE STRENGTH—The standard structural products have tensile strength averaging 352 lbs. per sq. in. In the tensile test, specimens 2 in. wide x 12 in. long were cut from the ½ in. thick board. Specimens were tested in a standard tension testing machine determining the breaking loads.

TRANSVERSE STRENGTH—Specimens of ½ in. Ins-Light and ½ in. Graylite, 3 in. wide, cut from full-sized sheets of Insulite are placed on supports, 10 in. O.C. A load is placed at midpoint between supports and increased until failure. Ins-Light will support up to 23.4 lb. and Graylite to 34.0 lb. in this test.

RESISTANCE TO MOISTURE—A specimen 12 in. square x ½ in. thick when immersed for a period of two hours to a depth of 1 in. to its upper surface in running water at a temperature of 70° F. shows an absorption of 11.18 per cent.

EXPANSION—Under test conditions similar to those above described for absorption the expansion due to moisture absorption is 0.112 per cent increase in length expressed as a percentage of the total length under air dry conditions.

STRUCTURAL STRENGTH—Tests on Bildrite Sheathing (applied with the long edges parallel to the framing members and according to specifications contained herein) prove that it is equivalent in bracing strength to the best grades of wood sheathing applied diagonally and 4 times stronger than typical wood sheathing applied horizontally.

PLASTER BOND—Authentic tests show that to rupture the bond between gypsum plaster and Insulite Lok-Joint Lath requires a pull of *1152 lbs. per sq. ft.*

FIRE RESISTANCE—Insulite is slow burning. Since there are no open joints in the standard methods of application to permit inflow of air, Insulite forms a barrier against fire travel.

NON-COMPRESSIBLE—Insulite will not compress under normal standard methods of use. When laid over roof decks under standard built-up roofing, it is sufficiently firm to prevent injurious dents or cutting of the roofing under normal use.

EASY TO INSTALL—Insulite is cut and nailed like lumber. Its light weight and convenient size of units for various purposes insure easy handling at low labor costs.

UNIFORMITY—Adequate laboratory control and mill inspection assure absolute uniformity in density, structural strength, and appearance. Packing methods eliminate damage under normal shipping conditions.

COLOR AND SURFACE TEXTURE—Due to the method of manufacture, Insulite has a uniformly pleasing light color—the color of clean new wood. It is also available in "graylite" color, a neutral shade of grayish brown. As marketed, it is furnished with two distinct attractive surface textures as follows:

The "Burlap Texture" simulates a loosely woven fabric.
The "Linen Texture" is smooth and simulates a closely woven fabric with a distinct surface texture.

Insulite Mills, International Falls, Minnesota

INSULITE THERMAL INSULATION PRODUCTS

Note: *All Insulite structural insulation products are protected by a patented process against damage by termites, rot, and fungi. This treatment is colorless and positively does not contain any poisonous chemicals or anything injurious to animal or human life.*

INS-LIGHT BUILDING BOARD

Description—Square edge boards of standard composition and density. One-half and three-quarter inch thicknesses are homogeneous; one-inch thickness is laminated (two half-inch thicknesses glued.)

Uses—Insulating structural sheathing and roof boarding, exterior and interior wall and ceiling finish. Also sound deadening.

Sizes (Area)—4 feet wide x 5, 6, 7, 8, 9, 10 and 12 feet long.

Thicknesses and Surface Finishes—½, ¾, and 1 inch thick in Burlap and Linen surfaces.

GRAYLITE BUILDING BOARD

Description—Square edge boards of standard composition and density of a grayish brown color.

Uses—Insulating structural sheathing and roof boarding, exterior and interior wall finish. Also sound deadening.

Sizes (Area)—4 feet wide x 5, 6, 7, 8, 9, 10 and 12 feet long. 6 feet wide x 8 and 12 feet long, (½ in. only).

Thickness and Surface Finishes—½, ¾, and 1 inch thick in Burlap and Linen surfaces.

BILDRITE SHEATHING

Description—A structural board of special composition with increased density, furnished in the thickness usually employed for sheathing purposes—25/32 in.

Bildrite Sheathing is manufactured under an exclusive process incorporating an integral asphalt treatment which gives the product a distinctive grayish brown color, increased strength, and added resistance to moisture absorption.

Uses—Highly efficient structural sheathing and roof boarding.

Sizes (Area)—4 ft. wide x 8, 8½, 9, 9½, 10 and 12 ft. long.

Thickness and Surface Finishes—25/32 in. homogeneous composition. Burlap and Linen surface textures. Each sheet is marked on the Linen surface to indicate proper nail spacing.

INS-LIGHT LOK-JOINT LATH

Description—Fabricated from boards of standard composition and density. Long edges shiplapped to prevent air infiltration and maintain continuity of insulation. One-half and three-quarter inch thicknesses are homogeneous. One-inch thickness is laminated (two half-inch thicknesses stapled). Galvanized wire "loks," spaced midway between framing supports 16 in. O.C. on bottom edge of each unit (an exclusive Insulite feature) which reinforce the unsupported horizontal joint and minimize yielding under trowel pressure during the plastering operation. These "loks" also serve as plaster grounds assuring not less than ¼ in. thickness of plaster on first coat.

Use—Interior insulating plaster base.

Size (Area)—18 x 48 inch.

Thicknesses and Surface Finish—½, ¾, and 1 inch thick, Burlap finish—*a surface to which plaster will adhere.*

INS-LIGHT AND GRAYLITE TILE

Note: *See joint details on page 4.*

Description—Fabricated from boards of standard composition and density. All four edges are neatly beveled on both surfaces. Tile can be furnished in two distinctive colors—Ins-light, light color; Graylite, grayish brown. Available in two types of joints—V-W and B-B.

Uses—Insulating interior wall and ceiling finish secured over plaster or similar finished surfaces with cement or/and brads or to structural framing or furring, except where one or the other is specially specified. In natural or stained finish; is an excellent acoustical absorbent.

Thicknesses and Surface Finishes—½ in. and 1 in. thick in Burlap and Linen surfaces.

Sizes—Small tile—12 x 12 in.; 12 x 24 in.; 16 x 16 in.; 24 x 24 in.
Large Tile—16 x 32 in.; 24 x 48 in.

Note: *Other thicknesses and sizes available on request.*

V-W—Interlocking joint symmetrical about the center line of the tile, making it reversible so that either surface may be exposed.

B-B—Beveled and Butt joint all around each unit (on small size tile only).

INS-LIGHT AND GRAYLITE PLANK

Note: *See joint details, page 4.*

Description—Fabricated from both the Ins-Light and Graylite board into several widths with V-W joints on the long edges and with a bead which runs parallel to the long edges in addition to the V-groove which is provided at all joints. Also available without bead on request.

Use—Insulating interior wall finish used either vertically or horizontally to provide a random plank effect. Can be left natural, stained, or painted.

Sizes—6, 8, 10, 12, and 16 in. widths.
8, 9, 10, and 12 ft. lengths.

Thicknesses and Fabrications—½ in. and 1 in. thick with V-W joint, with bead and choice of Ins-Light or Graylite. Ends cut square.

Note: *Other thicknesses and sizes available on request.*

INS-LIGHT AND GRAYLITE ROOF INSULATION

Description—Ins-Light Roof Insulation is fabricated from boards of standard composition and density.

Graylite Roof Insulation is fabricated from board which has been treated with asphalt uniformly distributed throughout the board. This treatment not only provides increased strength and added moisture resistance to the roof insulation but provides a better natural bond with the bitumen used in the roofing work.

Use—Insulation over various types of roof decks under built-up finished roofing.

Size (Area)—22 x 47 inches.

Thicknesses and Fabrication—Both Ins-Light and Graylite Roof Insulation are available in the same thicknesses and with the same fabrication. Depending on the type and thickness desired, they may be integral or laminated in multiple layers. The lamination may be done in either of two ways—by stapling or by cementing. The stapled roof insulation is strip-cemented in addition to the staples, and the edges may be either square or offset 1 in. on all four edges. The cemented Roof Insulation has an overall layer of a highly water-resistant cement, and the edges may be either square or offset ½ in.

Thickness	*Fabrication*	*Edges*
½ in.	Integral	Square
1 in.	Integral	Square or offset ½ in.
	Stapled	Square or offset 1 in.
1½ in.	Cemented	Square or offset ½ in.
	Stapled	Square or offset 1 in.
2 in.	Cemented	Square or offset ½ in.
	Stapled	Square or offset 1 in.

INS-LIGHT COLD STORAGE INSULATION

Description—Fabricated from special low density board of standard Insulite composition. Various thicknesses are accomplished by lamination (gluing) of standard thicknesses. Blocks are square edged. Insulite Low Density Insulation has an average conductivity of .28 to .29 B.t.u. per sq. ft., per inch thick, per hour, per degree F. with a density which averages approximately 10½ lbs.

Uses—For insulating floors, walls, and ceilings of ice manufacturing plants, cold storage plants, etc.

Sizes (Area)—6, 9, 12, 18, 24 in. wide x 36 in. long; 12, 18, 24 in. wide x 18 in. long; 24 in. x 24 in., 12, 24 in. wide x 48 in. long.

Thicknesses—1, 1½, 2, 3, and 4 inches thick.

SEALDSLAB COLD STORAGE INSULATION

Description—Fabricated from the same low density material and in the same manner as described for Ins-Light Cold Storage Insulation. Each unit of Sealdslab is "sealed dry" with a continuous impregnation of especially prepared asphalt to a uniform depth of 3/32 in. on all faces which, in addition to the final asphalt coating applied on the job, provides a superior seal against moisture.

Uses—Especially adapted to use in freezers; meat, beer, and creamery coolers; milk cooling tanks; fruit and vegetable storage rooms; general cold storage rooms; and in the air conditioning field.

Sizes (Area)—6, 9, 12, 18, 24 in. wide x 36 in. long; 12, 18, 24 in. wide x 18 in. long; 24 in. x 24 in.; 12, 24 in. wide x 48 in. long.

Thicknesses—1, 1½, 2, 3, and 4 inches thick.

INSULITE HARDBOARD PRODUCTS

Description—Specially fabricated boards, smooth on one surface and of different densities, hardness, and thicknesses, sizes up to 4 x 12 ft.

DualBoard—A medium density board, ¼ in. thick, golden oak brown.

DeLuxe DualBoard—A medium heavy density board, ¼ in. thick, golden oak brown.

HardBoard—Heavy density board, 1/10, 1/8, 3/16, 1/4, 5/16, in. thick, golden oak brown.

Tempered HardBoard—Extra heavy density board, 1/10, 1/8, 3/16, 1/4, 5/16 in. thick, burl walnut brown.

Black Tempered HardBoard—Extra heavy density board, 1/8, 3/16, 1/4 in. thick, slate black.

PanelTile—Extra heavy density board, 1/8 and 3/16 in. thick, burl walnut brown scored in 4 in. squares.

INSULITE FIBEROCK

A quality mineral wool blown from natural rock, treated during manufacture to increase resistance to moisture absorption. Clean, inorganic, incombustible, permanent, insect and vermin proof, unexcelled as efficient insulation.

Fibrerock is available in the following forms:

Loose Wool (bags) for hand application.

Granulated Wool (bags) for hand pouring and blowing.

Prepacked Wool (bags) Pressed loose wool in layers approximately 2 in. thick, as packed.

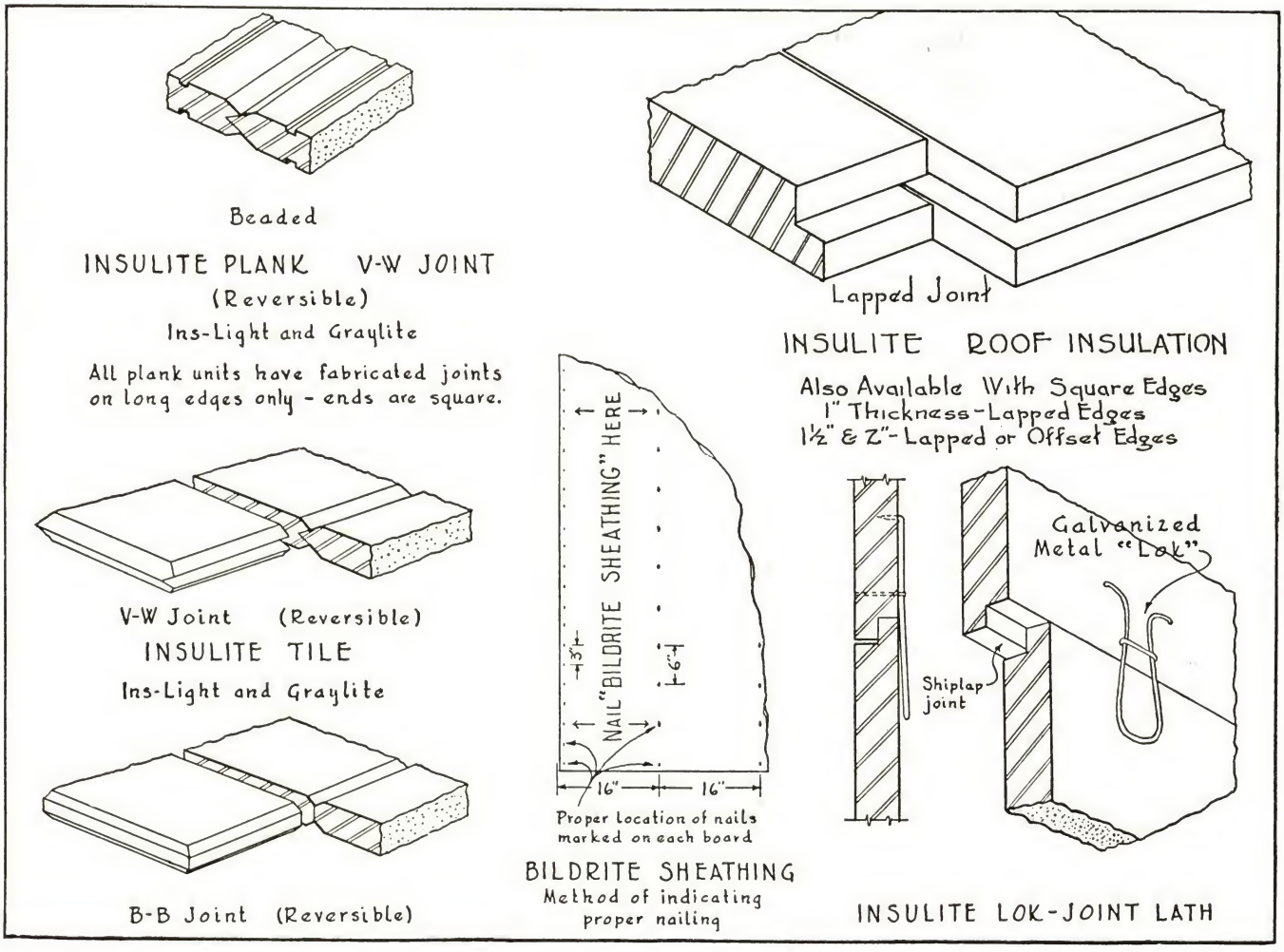
Plain Batts (cartons) 2 in. and 3⅝ in. thick x 15 in. x 23 in.

Paper-backed Batts (cartons) 2 in. and wall-thick x 15 in. x 48 in. or 15 in. x 23 in. Lined one side with asphalt saturated waterproof paper.

Pads (cartons) wall-thick x 9 in. x 15 in.

INSULITE SEALER

An oil base primer especially prepared for sealing the surface of Insulite Products. Although developed primarily for wood fiber, rigid board insulation, it can be used as a primer on other surfaces, such as plaster, wood, and Insulite HardBoard. Available in 1 quart and 1 gallon cans and 5 gallon pails.



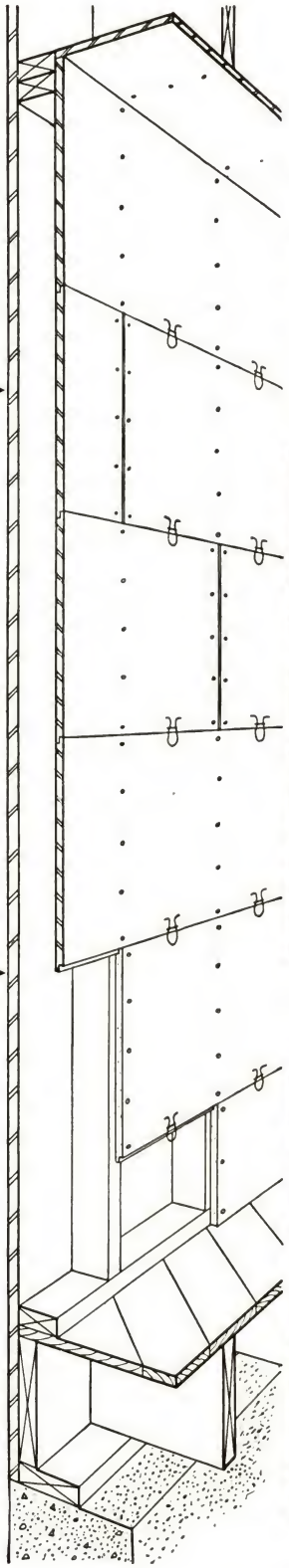
THE INSULITE WALL OF PROTECTION

BILDRITE SHEATHING

- Provides four times the bracing strength of ordinary wood sheathing.
- Has far greater insulation value than lumber.
- Builds windproofed walls; no open joints or knotholes.
- Application costs low.
- Waterproofed throughout; every fiber protected by asphalt.

Bildrite Sheathing →

Bildrite Sheathing →



LOK-JOINT LATH

- Provides perfect and permanent plaster bond.
- Prevents lath marks.
- Reduces passage of sound.
- Provides rigid, safe plastering surface.
- Insulates; full insulation at the joints.
- Minimizes plaster cracks.

← **Lok-Joint Lath**

← **Lok-Joint Lath**

PREFACE TO INSULITE SPECIFICATIONS

SPECIFICATION FORM

The form of these specifications is that of a "Master" which includes all clauses which in ordinary practice apply to average work. All clauses, obviously, do not apply to every building. In formulating the specifications for a particular building, only those clauses which apply should be selected for inclusion. Special provisions or methods but seldom required are not included—such clauses should be added wherever necessary to clearly define the procedure and especially to obviate controversy involving responsibility and cost.

NOTES

Notes in italics are explanatory or advisory only and should not be included in the specification.

SELECTIVE WORDS

Wherever words or phrases occur in the body of the specification paragraph printed in italics and enclosed in parentheses, choose that word or phrase which applies to the particular work, omitting those that are irrelevant. Wherever the word "Specify" occurs in italics enclosed in parentheses, thus *(specify)*, add the particular word or clause applicable.

ALTERATIONS AND ADDITIONS

These specifications cover new work only. For additions and alterations add such clauses covering repairs and replacements and the joining of old and new work as may be required.

ADVISORY SERVICE

The Engineering Department of The Insulite Company is at all times accessible for advice and recommendations in the formulating of the specification for out-of-the-ordinary conditions. Special data, the result of much extended research work, will be furnished on request.

INSULITE BILDRITE SHEATHING

Section . . . 1
MASTER SPECIFICATIONS

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall areas to be covered.*

(2) MATERIAL

Sheathing shall be Insulite Bildrite Sheathing as made by The Insulite Company, Minneapolis, Minn. Boards shall be 25/32 in. thick, 4 ft. wide x 8, 8½, 9, 9½, 10 and 12 ft. long as best adapted to framing conditions.

(3) APPLICATION

(3a) General—Insulation continuity shall be maintained. Apply Insulite with the length parallel with framing members, Linen face exposed to show marking for nail spacing. Boards shall be of sufficient length to completely span between sills and plates or other structural nailing members. Provide headers cut between framing members at all intermediate end joints, particularly at second floor line in balloon construction to form fire stop and nailing base for sheathing. Provide wood nailing base at necessary points to accommodate service outlets, brackets, shutters, etc. All joints shall center over framing members.

(3b) Spacing—Space boards ⅛ in. apart at all edges. At window and door frames bring Insulite in close contact with frame members.

(3c) Nails—Use 8d common nails.

Note: *For standard ½ in. thick building boards, use standard ⅜ in. head, 1½ in. galvanized roofing nails.*

(3d) Nailing—First nail Insulite to intermediate framing members and then nail the edges. At all edges space nails 3 in. apart on centers and not less than ⅜ in. from the edges. On intermediate framing members, space nails 6 in. apart O.C. Drive nails until the heads are slightly below the Insulite surface.

Note: *Proper spacing of nails is indicated by marking on the fine screen surface of each board of Insulite Bildrite Sheathing.*

SUPPLEMENTARY PROVISIONS

Note: *Provide for the following in other specification divisions when and where they apply. Insulite is not a nailing base.*

(1A) CONSTRUCTION

Framing shall be 16 in. on centers. Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association for all wood framing.

(2A) WOOD SIDING

All joints shall butt over the center of a stud. Nail through Insulite to each stud using nails of sufficient length to pass through the Insulite and penetrate the stud at least 1 in. For siding with butt thickness of ½ in. or less, use 8d nails. For all siding with butt thickness over ½ in., use 10d nails.

Note: *Building paper under siding is not necessary when Insulite Bildrite Sheathing is used.*

(3A) WATERPROOF FELT

Note: *Include under slate and tile roofing.*

Over the Insulite, under the furring strips, apply a continuous course of *(specify brand and weight)* waterproof felt.

(4A) FURRING STRIPS FOR SHINGLES, ETC.

(4A1) Provide 1 x 2 in. wood furring strips laid at right angles to framing members, over the Insulite and waterproof felt, properly spaced to take shingles, slate, tile, and similar rigid wall and roof covering. Nails shall be of sufficient length to pass through the Insulite and penetrate the framing members at least 1 in.

Note: *Building paper is not necessary on vertical surfaces under furring strips when Insulite Bildrite Sheathing is used.*

(4A2) Provide a 1 in. thick solid wood base over Insulite under all metal work, such as gutter aprons, valleys, hips, ridges, saddles, etc. to which to attach the metal in accordance with standard practice. Provide 2 x 4 in. headers spaced 16 in. O.C. cut in between rafters to form firm nailing for ends of boards laid parallel with the rafters.

(5A) EXTERIOR STUCCO

(5A1) Flashings—Flash over the head casings of all windows and doors with metal.

(5A2) Waterproof Building Paper

Note: *Asphalt coated waterproof paper weighing approximately 10 lb. per 100 sq. ft. may be placed under stucco base to protect against moisture infiltration through stucco cracks.*

(5A3) Self-Furring Stucco Base—Self-furring stucco bases, various forms of self-furring wire and expanded metal lath, shall be applied directly over Insulite *(and building paper)*, nailing or stapling through the Insulite into the studs with standard penetration into the wood.

(5A4) Non-Furring Stucco Bases—Provide 1 x 2 in. wood furring strips nailed vertically to each stud over Insulite *(and building paper)* to form furring for metal lath stucco base. Nails shall be of sufficient length to pass through the Insulite and penetrate the framing members at least 1 in.

(6A) MASONRY VENEER

Masonry veneer shall be laid in the usual manner allowing not less than ½ in. space between the face of the Insulite and the back of the veneer.

Metal ties for masonry veneer shall be nailed through Insulite into the studs. Nails shall be of sufficient length to pass through the Insulite and penetrate the studs at least 1 in.

Note: *Building paper is not necessary under masonry veneer when Insulite Bildrite Sheathing is used.*

Section . . . 2
MASTER SPECIFICATIONS

INSULITE INSULATING LOK-JOINT LATH

Note: *For Physical Characteristics, see page 2. For description, dimensions, etc., see page 3.*

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one thickness is used, list separately and the respective locations or areas covered.*

(2) MATERIAL

Plaster base shall be Insulite Lok-Joint Lath as made by The Insulite Company, Minneapolis, Minn. Lath units shall be *(½ in.) (and) (¾ in.) (and) (1 in.)* thick *(as above designated)*, 18 in. wide x 48 in. long with shiplapped longitudinal joints and intermediate "Loks" delivered to the building site in the original packages.

(3) APPLICATION

(3a) General—Do not moisten lath units before application. Start at ceiling and work down. Apply lath at right angles to the framing *(or furring)* members with galvanized wire "loks" out and at the bottom of the unit. End joints shall center over framing members. Stagger end joints in successive courses.

Where cutting is necessary, the lath shall be scored with the point of the lather's hatchet and broken along the scored line. Cut units so that "loks" will occur midway between supports.

Where piecing out is necessary, use only strips of Insulite.

Accurately cut and fit lath around all electric outlet boxes, piping, etc.

Next to the last course of lath on both walls and ceilings shall not be nailed securely until the last course is locked in place.

(3b) Spacing—Space ends of boards $\frac{3}{16}$ in. apart. Bring locked shiplapped edges together in moderate contact.

(3c) Nails

(3c1) Use No. 13 gauge, 1⅛ in. long, blued plaster-board nails with $\frac{5}{16}$ in. heads for ½ in. thick Lok-Joint Lath.

(3c2) Use No. 13 gauge, 1¾ in. long, blued plaster-board nails with $\frac{5}{16}$ in. heads for *(¾ in.) (and) (1 in.)* thick Lok-Joint Lath.

(3d) Nailing—First nail units to intermediate supports, then at ends. Space nails approximately 4 in. apart and not closer than ⅜ in. to edges.

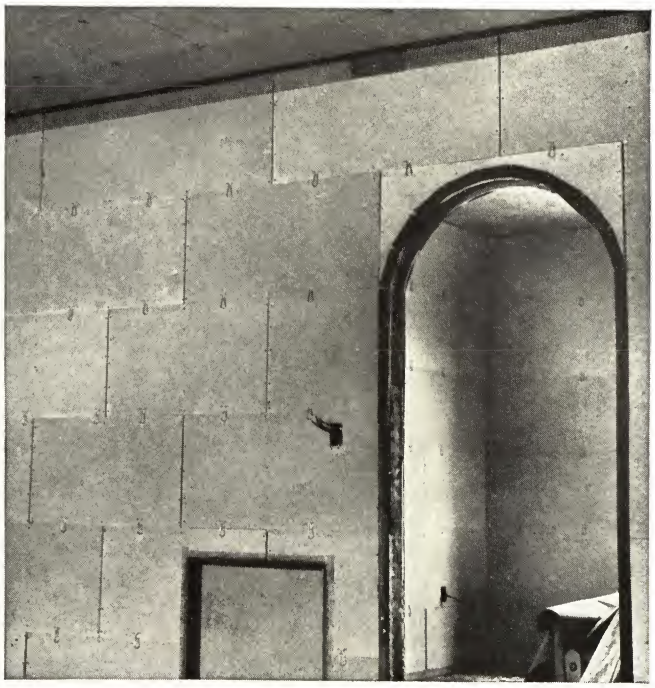
(3e) Angle Reinforcement—All corners shall be reinforced with standard metal corner beads. All re-entrant angles shall be reinforced with standard expanded metal angle lath strips. Reinforcement shall be securely stapled over Insulite Lath.

SUPPLEMENTARY PROVISIONS

Note: *Provide for the following in other specification divisions when and where they apply.*

(1A) CONSTRUCTION

Framing shall be 12 or 16 in. on centers. Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association for all wood framing.



(2A) FURRING

Fur all exterior masonry walls to receive Insulite Lath with *(1 x 2 in.) (specify)* furring strips set 12 or 16 in. O.C. accurately shimmed to a true, level plane. Secure substantially to masonry.

(3A) GROUNDS

Furnish and erect, substantially secured to framing members through the Insulite Lath, full ½ in. wood grounds for all interior wood trim.

Where *(¾ in.) (and) (1 in.)* thick Insulite Lath units are used, add the necessary trim grounds on all door and window frames to compensate for this thickness plus a full ½ inch of plaster.

(4A) PLASTERING

(4A1) Caution—Do not wet Insulite Lath before applying plaster.

(4A2) Inspection—Inspect nailing and notify lather of any portions of Insulite Lath not adequately secured in accordance with paragraph No. 3 above. See that all corners and angles are reinforced with metal corner beads accurately set to line with grounds and that all re-entrant angles are reinforced with expanded metal angle strips.

(4A3) Plaster—Use standard gypsum cement plaster or gypsum wood fiber plaster for scratch and brown coats mixed accurately in accordance with the manufacturer's specifications. Both scratch and brown coat shall be mixed to a wet consistency to allow for application with light trowel pressure and to facilitate darbying. Use any standard plaster finish over the brown coat, such as gypsum, lime, or lime gauged with gypsum mixed in accordance with the manufacturer's specifications.

Note: *Lime plaster or lime gauged with gypsum should not be used for scratch and brown coats.*

(4A4) Application—Apply in three (3) coats to full ½ in. grounds in accordance with the plaster manufacturer's specification. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary, and particularly on ceilings, provide plaster screeds to insure an even, uniform full ½ in. plaster thickness.

Note: *The maintenance of a uniform full ½ in. thickness of plaster cannot be too strongly stressed. Most plaster defects where a fibrous or board plaster base is used may be attributed to a weak, thin plaster coat, inadequate to withstand the normal building strains of shrinkage, settlement, and vibration.*

In applying the scratch coat of plaster, this shall be carefully pressed into all joints.

If the brown coat becomes stiff and sets during darbying, wet down the surface to allow for darbying without undue pressure against the plaster surface.

Darby strokes shall be in the direction of framing members with the darby spanning two studs or joists.

(4A5) Ventilation—Provide adequate ventilation for the proper drying of the plaster.

Note: *Due to the moistureproof characteristics of Insulite Lath, all plaster moisture must be carried off by the air in contact with the exposed plaster surface.*

(4A6) Heat—Provide adequate heat to prevent injury by frost.

(5A) ELECTRIC OUTLETS

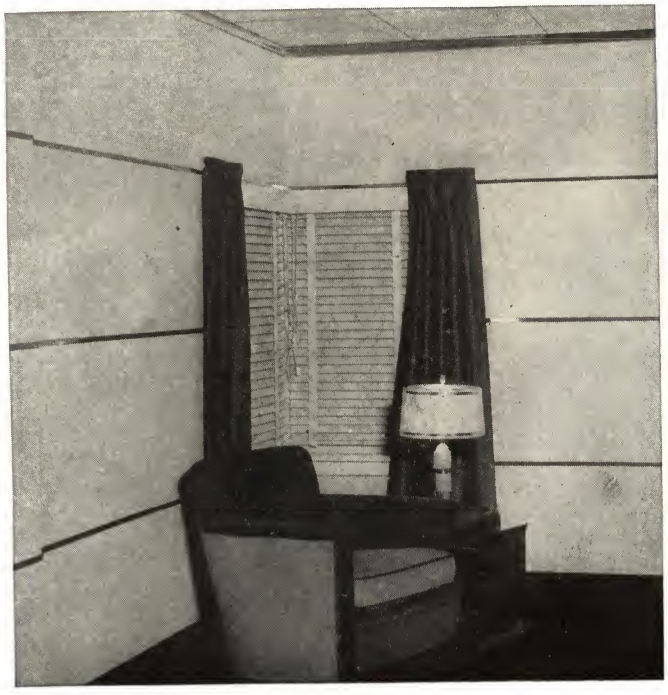
Where ¾ in. or 1 in. thick Insulite Lath units are used, set electric outlet boxes to accommodate a full 1¼ in. or 1½ in. thickness respectively from face of stud or joist to face of plaster.

INSULITE INTERIOR FINISH INSULATION

Section . . . 3
MASTER SPECIFICATIONS

Note: *For Physical Characteristics, see page 2. For descriptions, dimensions, surface finishes, etc., see page 3.*

BUILDING BOARD (INS-LIGHT AND GRAYLITE)



(1) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one thickness is used or more than one type of surface exposed, list separately and the respective locations or areas covered.*

Note: *For the best results, interior detailed elevations of walls and plans of ceilings showing joint or panel design should be included in the drawings and referred to here.*

(2) FRAMING

(2a) Studs and joists shall be framed to conform accurately to the design of board spacing or paneling, set 12 or 16 in. O.C. Use additional studs, joists, and headers where necessary. Provide headers back of all wainscot caps, chair rails, baseboards, and other heavy wood trim.

(2b) It is imperative for satisfactory results that framing to receive Insulite Building Board used as interior finish shall be selected for straightness and uniform thickness to form a true, even nailing base. Bent studs shall be straightened by notching and wedging from the concave side. Framing members that are bent sideways so that the Insulite joint will not center on the bearing shall be forced into position with cut-in headers.

(2c) Fur masonry walls with *(1 x 2 in.) (specify)* furring strips set 12 or 16 in. O.C. accurately shimmed to a true, level plane. Secure substantially to masonry.

(3) MATERIAL

Interior finish shall be *(Ins-Light) (Graylite)* Building Board as made by The Insulite Company, Minneapolis, Minn. Boards

Graylite Building Board, Ins-Light Tile and Plank and HardBoard complete this interior

Unusually attractive application of Graylite Building Board as Interior Finish

Ins-Light Building Board and metal moldings make this dress shop an attractive place

Insulite PanelTile and grooved Building Board used for this kitchen and dinette

Graylite Building Board and Ins-Light Tile ceiling produce this imposing Church interior

Graylite Building Board on walls, Ins-Light Tile on ceiling and Hardboard wainscot complete this attractive bedroom

shall be *(½ in.) (and) (¾ in.) (and) (1 in.) thick (as designated in paragraph 1)*, 4 ft. wide x 5, 6, 7, 8, 9, 10 and 12 ft. long as best adapted, free from surface imperfections and edges where not covered by trim or battens free from deleterious dents and abrasions. Exposed surfaces shall be *(Burlap) (and) (Linen)* finish.

(4) CUTTING

All cutting and fitting shall be done in a neat, workmanlike manner. Where joints are not exposed, cut with a fine tooth saw, using a sharp blade with rapid strokes and a minimum of pressure. Where joints are exposed, cut with a sharp linoleum knife against a straight edge, or with a fiber board cutting tool.

Note: *Sawing if forced leaves a burr, often unsatisfactory for decorating. Cutting with a sharp linoleum knife leaves a smooth, true edge and can be accomplished in three strokes. Very accurate cuts can be made with either The Stanley Fiber Board Cutter or The Bevel Devil.*

(5) BEVELING AND ROUNDING EDGES

(5a) *(Beveling) (and) (rounding)* of edges of Insulite *(boards) (and) (battens)* shall be done in a uniform, workmanlike manner, straight and true to line before they are erected.

(5b) Beveling shall be done with a beveling tool or with sandpaper or emery cloth wrapped around a wood block.

(5c) Rounded edges shall be accomplished by means of a piece of sandpaper held in the hand.

(6) BATTENS

(6a) Insulite battens shall be *(specify thickness and width)* with edges neatly *(beveled) (rounded) (specify)*.

(6b) Wood battens shall be *(specify thickness, width, design)*.

(7) METAL JOINT MOULDINGS

Note: *There are various sizes and designs of stainless steel, aluminum, and other metal mouldings manufactured for use in covering the joints of insulating wall boards.*

Metal joint battens shall be as detailed made by *(specify name of manufacturer, type of metal and finish)*.

(8) APPLICATION

(8a) General—Insulite shall be applied immediately prior to the erection of interior wood trim. The Insulite boards shall be placed singly around the room and allowed to stand at least 24 hours before erection to allow adjustment to atmospheric conditions. In exceptionally dry weather moisten the Insulite lightly on side facing supports and pile the boards 24 hours before erection.

Note: *Insulite, like other materials used in interior construction (such as wood trim), responds to some extent to changes in humidity and temperature; consequently discretion should be exercised in its application.*

Apply Insulite with the length parallel with framing members with *(Burlap) (and) (Linen)* face exposed *(as designated in par. 1)*. All joints shall center over framing members.

(8b) Spacing—

(8b1) Battened Joints—Space boards ⅛ in. apart at edges.

(8b2) Exposed Joints—Bring boards to a moderate contact. Do not force into place.

(8c) Nails—

(8c1) For ½ in. thick Insulite, use standard 1½ in. galvanized roofing nails with ⅜ in. heads where joints are covered with battens or wood trim. Use 1½ in. finishing nails where nailing is exposed, driving nails at an angle of 45° alternating from nail to nail.

(8c2) For *(¾ in.) (and) (1 in.)* thick Insulite, use 8d common nails where joints are covered with battens or wood trim. Use 2 in. finishing nails where nailing is exposed.

(8d) Nailing—First nail Insulite to intermediate framing members and then nail the edges. At all edges space nails 3 in. apart O.C. and approximately ⅜ in. away from the edge. On intermediate framing members, space nails 6 in. apart O.C.

Where nailing is exposed, drive finishing nails at an angle and set the heads neatly below the Insulite surface. Where nails are covered by battens or wood trim, drive nails until the heads are slightly below the Insulite surface.

(8e) Battens and Wood Trim—Apply battens and wood trim *(as detailed)* over Insulite with nails of sufficient length to pass through the Insulite and penetrate the framing members at least 1 in.

(8f) Metal Moulding—Apply metal mouldings as detailed. *(Specify any particular method of attachment.)*

PLANK (INS-LIGHT AND GRAYLITE)

(9) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one type of surface is exposed, list and locate separately.*

(10) FRAMING, ETC.

Note: *Where plank units are applied directly to framing members, framing shall be as specified in paragraph 2, page 8.*

(10a) If plank units are to be placed vertically, 1 x 2 in. furrings strips shall be applied over the studs placed horizontally, 8 in. —12 in. O.C.

(10b) Horizontally applied plank may be applied to studs 12 or 16 in. O.C.

(11) MATERIAL

Interior finish shall be Insulite Plank as made by The Insulite Company, Minneapolis, Minn. Plank units shall be *(Ins-Light) (Graylite) (½ in.) (1 in.)* thick, beaded and *(here specify length)* with V-W joints, delivered to the building site in the original manufacturer's packages. Exposed surface shall be *(Burlap) (Linen)* texture.

(12) CUTTING

Note: *As specified in paragraph 4 above for Insulite Building Board.*

(13) APPLICATION

(13a) General—Apply units with *(Burlap) (Linen)* surface exposed.

(13a1) Units shall be applied at right angles to the framing members. End joints shall be centered over framing members.

(13a2) Units shall be applied over *(solid wood backing) (firm plaster backing)* in accordance with the detailed drawings for the interior finish.

Note: *Use (13a1) where units are applied to framing members; (13a2) where units are applied to a solid backing.*

(13b) Spacing—Bring plank units to a moderate contact at interlocking edges. Do not force into place. End joints shall be spaced ⅛ in. apart.

Note: *On horizontal plank applications, the end joints may be made to form part of the wall pattern by beveling the ends, or by using metal mouldings, etc.*

(13c) Applying—Apply plank units to wall surface with *(specify type) (acoustical cement) (and) (1½ in. finishing nails)*.

(13c1) Cementing and Nailing—Apply *(specify type)* acoustical cement in spots, one on each edge, at each nailing position. After placing the unit in place, drive nails at an angle starting the nail at the intersection of the bevel and the exposed surface of the plank. Use a nail at each edge and not more than 16 in. apart.

(13c2) Nailing—Nail plank units to each framing member with one nail at each edge, driven at an angle and started at the intersection of the bevel and the exposed surface of the plank. Set the nail neatly below the surface.

(13d) Nails—*(Use 1½ in. finishing nails for ½ in. plank and 2 in. finishing nails for 1 in. plank.)*

(13e) Overlays, Trim, etc.—Apply *(decorative overlays) (metal mouldings) (wood trim)* over Insulite Plank with *(nails) (screws)* of sufficient length to pass through the Insulite and penetrate the backing at least 1 in.

TILE (INS-LIGHT AND GRAYLITE)

(14) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one type of surface is exposed, list separately and the respective locations or areas covered. For the best results, accurate, detailed elevations of walls and plans of ceilings showing disposition and sizes of units should be included in the drawings and referred to here.*

(15) WOOD NAILING BASE AND FURRING STRIPS

(15a) Wood Nailing Base—Cover framing with a wood sub-base consisting of No. 1 Common Grade of Douglas Fir, West Coast Hemlock, or equivalent, matched $^{25}/_{32}$ in. lumber to form a continuous nailing base.

(15b) Furring Strips—1 x 2 in. furring strips shall be applied to the framing members, so placed as to form a firm nailing base for the tile units. Spacing shall not exceed 16 in. O.C.

Note: *Use (15a) or (15b) where Insulite Tile is not applied over plastered surfaces.*

(16) MATERIALS

Interior finish shall be Insulite Tile as made by The Insulite Company, Minneapolis, Minn. Tile shall be beveled both sides with *(B-B) (V-W)* joint, *(½ in.) (1 in.)* thick x *(12 x 12 in.) (16 x 16 in.) (12 x 24 in.) (24 x 24 in.) (16 x 32 in.) (24 x 48 in.) (as indicated on details)*. Exposed surface shall be *(Burlap) (Linen)* texture. *(Specify Ins-Light or Graylite.)*

(17) CUTTING

Note: *As specified in paragraph 4, page 10 for Insulite Building Board.*

(18) APPLICATION

(18a) General—Insulite Tile shall be laid in exact accordance with the detail drawings with *(Burlap) (Linen)* texture exposed.

(18b) Spacing—Bring units to a moderate contact. Do not force into place.

(18c) Cement—Cement shall be *(specify)*.

(18d) Nails—Use *(4d finishing nails for ½ in.) (2 in. finishing nails for 1 in.)*

Note: *Use zinc-coated nails where high humidities prevail.*

(18e) Cementing and Nailing Over Plaster Base—Apply spots of cement to the back surface near each corner with additional spots approximately 10 in. apart on larger tile. Exercise care to prevent cement from appearing on exposed surface. Press and slide the tile into position, level and true, and nail tiles into position with one or two nails at each corner and additional nails as required for large tile. Drive nails at an angle and set neatly below the Insulite surface. Start nail at intersection of bevel and surface of tile.

Note: *The above method advocated in better classes of work.*

(18f) Nailing Only Over Plaster—Nail tile in position using 5 penny nails (for ½ in. thick material) with two nails at each corner and additional nails as required for large tile. Drive nails at 45 degree angle and set nail heads neatly below the Insulite surface. Start nail at intersection of bevel and surface of tile.

Note: *Use the above method only where the plaster is sound.*

(18g) Nailing over Wood Backing (Continuous or Furring Strips)—Nail tile in position using two nails at each corner and additional nails as required for larger tile. Use 4 penny finishing nails *(2 in. finishing nails for 1 in.)* and drive straight or at a slight angle with heads set neatly below the Insulite surface. Start nail at intersection of bevel and surface of tile.

(18h) Overlays—Apply decorative overlays by spot cementing and nailing or by nailing only. Use nails of sufficient length driven at an angle with heads set to assure adequate penetration of nailing base.

Applying Tile over plastered surface.

Interesting use of Tile in Court House.

INSULITE EXTERIOR FINISH INSULATION

Section . . . 4
MASTER SPECIFICATIONS

Note: *Insulite Building Board may be used to advantage in many classes of work as an exposed exterior finish over frame construction.*

(1) WORK INCLUDED

Note: *Here list and locate the wall surfaces to be covered. If more than one thickness is used or more than one type of surface exposed, list separately.*

(2) FRAMING

Studs shall be framed to conform accurately to the design of board spacing or paneling, set 16 in. O.C. Use additional studs and headers where necessary. Provide headers back of all horizontal heavy wood trim. Where necessary, straighten and stay studs back of Insulite joints to provide central bearing under joints.

(3) MATERIAL

Exterior finish shall be *(Ins-light) (Graylite)* Building Board as made by The Insulite Company, Minneapolis, Minn. Boards shall be free from surface imperfections *(½ in.) (and) (¾ in.) (and) (1 in.)* thick *(as designated in paragraph 1)*, 4 ft. wide x 5, 6, 7, 8, 9, 10, and 12 ft. long as best adapted. Exposed surface shall be *(Burlap) (and) (Linen)* texture.

(4) APPLICATION

(4a) General—Moisten and pile Insulite boards one day before application. Remove boards from the pile just prior to nailing to the framing. Moistening shall be accomplished by sprinkling lightly with a hose or sprinkling can or from a broom dipped into a pail of water.

Apply Insulite with the length parallel with framing members *(Burlap) (Linen)*, face exposed. All joints shall center over framing members.

(4b) Spacing—Space boards ⅛ in. apart at all edges. At window and door frames bring Insulite in close contact with frame members.

(4c) Nails—

(4c1) Use standard ⅜ in. head, 1½ in. galvanized roofing nails for *½ in.* thick Insulite.

(4c2) Use 8d galvanized or coated nails for *(¾ in.) (and) (1 in.)* thick Insulite.

(4d) Nailing—First nail Insulite to intermediate framing members and then nail the edges. At all edges space nails 3 in. apart on centers and ⅜ in. away from the edge. On intermediate framing members, space nails 6 in. apart O.C. Drive nails until the heads are slightly below the Insulite surface.

(4e) Painting—

Note: *Painting should be done before battens or wood trim is applied over the Insulite joints. Wherever exposed directly to the weather, the Insulite surface should be sized and painted in accordance with specifications, Section 5, below and page 13.*

(4f) Battens and Wood Trim—Apply battens and wood trim *(as detailed)* over Insulite with nails of sufficient length to pass through the Insulite and penetrate the framing members at least 1 in.

FINISHING INSULITE
STAINING, PAINTING, PAPERING, ETC.

Section . . . 5
MASTER SPECIFICATIONS

Note: *The decorative possibilities of Insulite have been demonstrated in thousands of installations. It is frequently used as interior finish in its natural state. It may be finished with stains, paints, plastic paints, wall coverings, etc. Insulite is a distinctive product, designed to provide high insulating efficiency with decided structural strength—painting and finishing methods entirely satisfactory for plaster or wood surfaces are not necessarily most suitable for Insulite.*

(1) STAINS

Note: *Stains may be used where the natural color of the Insulite is to be modified without destroying the surface texture. Glue stains have been found to give the best results. Alcohol stains are not recommended being found to dry too rapidly leaving unavoidable brush marks and streaks. Following is a satisfactory glue stain:*

Dissolve ½ lb. of flake or ground glue to the gallon of boiling water. After the glue has been thoroughly dissolved, add dry colors in amounts to produce the depth of tone and color required. Stir the dry colors in water to form a thin paste before adding to the glue solution.

Apply the glue stain promptly after preparation, preferably while still warm.

(2) SIZING

Note: *Insulite, except for the application of stains and water paints and certain types of plastic paint, requires a sizing coat.*

A size or primer that completely seals the surface pores of Insulite will make it possible for the paint not only to cover uniformly and smoothly, but to go farther as well. For information regarding prepared sizes or primers satisfactory for this use, write The Insulite Company, Minneapolis, Minn.

Insulite Sealer—Developed primarily for priming the surface of either Ins-Light or Graylite Building Board. Mixed, ready for use, it makes an excellent base for further paint coats.

(3) OIL OR VARNISH PAINTS

Note: *The Linen surface finish of Insulite is recommended for these finishes. The use of reputable, high grade interior paints is advocated to assure the best results. These may be obtained to*

produce varying degrees of luster, such as gloss, semi-gloss or eggshell and flat. In two coat work, the second coat may be brush stippled, sponge stippled in one or more contrasting tones, or glazed, all accomplished in the standard manner.

Brushing lacquers, bronzing liquids, and other similar finishing materials may be applied to sized Insulite.

(3a) Sizing—Thoroughly size the Insulite surface with Insulite Sealer, following instructions as given on the container. Allow sealer to dry for at least 24 hours before applying the first coat of paint.

Note: *Glue size or other approved primers may be used.*

(3b) Painting—Over the sizing apply two coats of *(specify brand and manufacturer)* paint.

Note: *Describe further any particular surface finish.*

(4) WATER EMULSION PAINTS

Note: *If glazed, the Burlap textured surface is advocated, otherwise the Linen surface is recommended. These paints should be applied directly to the unsized Insulite surface. A single coat will give coverage, though two coats are recommended.*

(4a) Painting—Apply *(one) (two)* coats of *(specify brand and manufacturer)* paint. Paint shall be prepared, mixed, and applied in strict accordance with the manufacturer's directions.

(4b) Glazing—

Note: *These paints may also be glazed as are the varnish paints under the following directions:*

Add one (1) quart of spar varnish to the gallon of paste before mixing with water. Apply to the Insulite surface and glaze.

Note: *Describe further the particular glaze and effect desired.*

(5) WATER PAINTS

Note: *Either Burlap or Linen surface may be used dependent on effect. Paints of this class consist of water as a vehicle plus a glue or casein binder and pigment. Ordinary calcimines are of this type. They may be applied directly to unsized Insulite.*

Painting—Apply one (1) coat of *(calcimine) (specify brand and manufacturer of water paint). (Calcimine) (paint)* shall be prepared, mixed, and applied in strict accordance with the manufacturer's directions.

(6) STENCILED AND BURNED DESIGNS

Note: *Decorative designs may be used to advantage on the surface of Insulite. These may be produced either by stenciling or burning the design. For further information on equipment suitable for such work, write The Insulite Company, Minneapolis, Minn.*

Decorative stencils of design and color selected by the architect shall be applied as follows: *(Here list and describe stencils required.)*

Stencil colors shall be made of pure Japan color paste thinned to the proper consistency with six (6) parts of turpentine, three (3) parts of linseed oil, to one (1) part of Japan Drier.

Burned designs shall be as follows: *(Here list the designs and location of surfaces to be treated.)* The burning shall be done with a tool made for this purpose.

(7) PLASTIC PAINTS

Note: *The Linen surface is recommended. Plastic paints are thick paints which, when applied, can be textured by brush or tools to produce various textures. They are divided into two groups—those prepared by the addition of water to a powder and those having a linseed oil base furnished prepared ready for use.*

(7a) Covering Joints—Treat all joints, corners, and re-entrant angles as recommended by the plastic paint manufacturer.

(7b) Applying Plastic Paint—Apply plastic paint *(specify brand and manufacturer)* to all Insulite surfaces. Paint shall be prepared, mixed, and applied in strict accordance with the manufacturer's directions, textured, painted or glazed, tinted as follows:

Note: *Here describe the color tone and surface texture. If more than one type is required, describe, list, and locate each separately.*

(8) WALL COVERINGS

Note: *Use the Linen surface Insulite for applications of wall coverings. Papers with bold patterns are recommended. Canvas, fabrics such as Sanitas, leathers, and even thin plywoods and thin metal sheets may be applied. It must be remembered that wood and fiber insulating boards are subject to some slight expansion and contraction, and consequently there is the possibility of a wall covering cracking at the joint. However, the following specifications are the most satisfactory of those which are now in use.*

(8a) Covering Joints—Before applying plastic paint, treat all joints, corners, and re-entrant angles as recommended by the manufacturer.

(8b) Sizing—Thoroughly size the Insulite surfaces with glue-size. After the size has completely dried, sand the surface lightly.

(8c) Wall Covering—

Note: *Here specify the particular wall covering. Wall paper may be applied over a lining paper if desired. If special requirements must be met, follow the manufacturer's standard recommended method of procedure.*

Section . . . 6
MASTER SPECIFICATIONS

INSULITE SOUND INSULATION PARTITIONS AND FLOORS

Insulite between sub and finished floors for sound deadening

Note: *Insulite Lok-Joint Lath and plaster partitions have been found by test to be more resistant to the transmission of sound than ordinary plastered partitions, but for still more satisfactory results the constructions described under this heading should be used. Where sound insulation is required, details to fit the particular construction should be given and specifications formulated along the lines of those suggested in Section 1 to 5 inclusive to fit the particular installation.*

MATERIAL

The material adapted to sound insulation of partitions and floors is Insulite Building Board or Insulite Lok-Joint Lath.

PARTITIONS

For sound insulating partitions Insulite may be used in any one of three ways. One method is to use staggered stud partition with plaster applied directly to the Insulite Lok-Joint Lath. The studs should be 16 in. on center and should be nailed to a 2 x 6 sill. The usual precautions in regard to straightness of studding should be observed.

For the best sound insulating partition between rooms the following construction should be used: 2 x 2 in. studding or 2 x 4 in. stud-

ding set flat should be 12 or 16 inches on center, nailed to a 2 x 6 sill and plate. Insulite Lok-Joint Lath should be nailed to these in accordance with specifications, Section 2, and the lath plastered. A loose layer of Insulite should be placed between the studs. The vertical edge of the loose layer should lap for a distance of 3 or 4 inches. This is not a load-bearing partition.

For tile partitions Insulite should be used between a double tile partition.

CONCRETE STRUCTURAL FLOORS

When a wood floor is to be used, the Insulite is nailed to sleepers 48 in. on center, the space between the sleepers being filled with cinder concrete. The finish floor should be nailed to 1 x 3 furring strips placed across the sleepers 16 in. on center and nailed through the Insulite to the sleepers.

WOOD JOIST FLOORS

Insulite may be laid directly over the rough flooring and the finished flooring nailed to the rough flooring through the Insulite, though a floating floor is recommended in preference. In the floating floor construction 1 x 3 furring strips should be nailed through the Insulite to the sub-floor spaced 16 in. O.C. nailed only at 48 in. intervals—the finished flooring is then nailed to the furring strips in the usual manner.

For superior sound insulation of floors having wood joists, the first layer of Insulite is placed on top of the sub-floor with furring strips over the Insulite and the finish floor nailed to these strips as described above. The ceiling should be supported by independent ceiling joists. These ceiling joists should be bridged to prevent twisting and should be spaced midway between the floor joists. A layer of Insulite Lok-Joint Lath should be nailed to the ceiling joists in accordance with Section 2, and the lath plastered.

ROOF INSULATION SPECIFICATIONS

Introduction—A Guide to Good Practice

Section . . . 7

MASTER SPECIFICATIONS

GENERAL

Roof insulation is customarily furnished and applied by the roofing contractor. Too often his work has to be executed against time and frequently under unfavorable weather conditions. There are, however, certain provisions following which, if clearly set forth in the specifications, enable him to do better and more rapid work and at the same time assure a longer lifed roof to the owner.

Vapor cut-offs, seal courses and water cut-offs are approved for standard practice by the United Roofing Contractors' Association.

VAPOR CUT-OFF

While several types are used, the vapor cut-off consists essentially of a multiple layer of roofing felts or of a particular kind of "rubber" roofing nailed directly over the board deck and mopped over with hot bitumen to receive the insulation. This vapor cut-off, together with the finished roof covering applied over the insulation, sandwiches the insulation between two water and vapor-proof layers.

SEAL COURSE FOR CONCRETE AND SIMILAR DECKS

Buildings with concrete and similar decks present two major problems to the roofer. He is often forced to lay the roofing, including the insulation, before other trades have left the roof in order that plastering and other operations within the building may be completed on scheduled time. Again, he may be called upon to work during inclement weather. Damage under these conditions which may be done to both roofing and insulation may later cause the owner more or less costly replacement. To provide against such contingencies, it is recommended that the specifications provide for the application of a standard seal course which acts as a temporary waterproof covering for the entire roof area.

WATER CUT-OFFS

Provision against damage by sudden showers, over-night and week-end stopping of the insulation and roofing and assurance against spread of leaks from the sometimes seemingly inevitable defects or abuse can be made with properly installed water cut-offs through the body of the insulation. They are standard in good construction.

Their importance is such that it is suggested that the architect indicate with faint lines on the roof plan their desired locations. This assists the roofing contractor in the planning of the roofing operations divided into isolated areas to be completed within certain working hours and serves as a permanent record of their location.

WOOD NAILING STRIPS

Insulation is not a nailing base. Therefore, it is necessary that wood nailing strips be provided on all roof decks to form a permanent, rigid nailing base for the secure attachment of all sheet metal flashing. These strips should be the full thickness of the insulation and should be at least 1 in. wider than the apron of the flashing.

Provide in the specifications under the carpentry division that the general contractor shall furnish and install these nailing strips.

RECOMMENDED NUMBER OF LAYERS

Insulite Roof Insulation is made in various laminated (stapled) thicknesses or plies up to 2 in. thick. It is made with both offset (1 in. shiplapped) and square edge. Where square edged units are used, for the best results the insulation should be laid in two (2) layers, the second breaking joints with the first layer.

BITUMENS AND FELTS

Where coal tar pitch is used, all felts should be impregnated with the same material. Where asphalt pitch is used, use asphalt impregnated felts.

PREFACE TO SPECIFICATIONS

Read "Preface to Specifications" given on page 6 in explanation of form, notes, etc.

Insulite Roof Insulation laid with "Water Cut-Offs"

Section . . . 7A
MASTER SPECIFICATIONS

INSULITE ROOF INSULATION
Over Wood Roof Decks Under Built-Up Roofing

(1) WORK INCLUDED

Note: *List and locate the roof areas to be insulated. If more than one thickness of insulation is required on various roof areas, list and locate each separately.*

(2) INSULATION MATERIAL

Insulation shall be *(homogeneous) (two ply laminated) (stitched) (specify)* thick *(offset) (square)* edge *(Ins-light) (Graylite)* Roof Insulation as made by The Insulite Company, Minneapolis, Minn., laid in *(one) (two)* layer*(s)*. Boards shall be 22″ x 47″. All Insulite shall be kept dry before, during and after application.

(3) WOOD NAILING STRIPS

Note: *To provide adequate attachment for miscellaneous sheet metal flashings, such as leader outlets, soil and vent flashings, metal base flashings, eave aprons, gravel stops, etc.*

The General Contractor will provide wood nailing strips to form a nailing base under all sheet metal flashing aprons and flanges of every nature. Strips shall be the full thickness of the insulation and at least 1 in. wider than the apron rigidly secured to the roof construction with nails, lag bolts, expansion bolts, or other means of attachment as best adapted to the particular construction. This contractor shall check all nailing strips and notify the architect in writing of any defects for correction before proceeding with the laying of insulation and roofing.

(4) ROOF DECK

The surface of the roof deck shall be broomed clean, free from dirt, loose material, and thoroughly dry. All loose or springy boards shall be properly nailed before insulation is laid.

(5) BUILDING PAPER

Note: *Use this clause only in case the insulation is laid in one (1) layer.*

The entire roof area shall be covered with two (2) plies (lapped half) rosin sized building paper or 6 lb. coated felt. Nail sufficiently to hold in place until the insulation is laid over it.

Note: *Include (5) for insulation against heat loss only. Omit where high humidities are maintained.*

Insulite Roof Insulation over Wood Roof Deck

(6) VAPOR CUT-OFF

Over the wood roof deck lay two (2) plies (lapped half) of light weight (34 lbs. per square) bitumen prepared roofing having one side coated. Lay coated side down. Nail the back edge of each sheet with tin-capped, galvanized, barbed roofing nails spaced 12 in. O.C. All laps shall be mopped back 12 in. with hot bitumen. Do not mop over this membrane until just prior to the laying of insulation.

Note: *Include (6) only where high humidities are maintained.*

(7) APPLICATION OF INSULATION

(7a) General—Only as much Insulite shall be laid over the roof area as can be covered by the finished roofing in any one day.

Lay the Insulite in *(one) (two)* layer*(s)* over the entire roof area. Adjoining edges of the boards shall be brought to a moderate contact but shall not be forced into place. Where the roof meets vertical surfaces, such as parapets, penthouses, etc., the boards shall be cut in a neat, workmanlike manner to insure proper joining without forcing. Boards shall be laid in parallel courses with end joints in each course breaking with those of adjoining courses.

(7b) Mopping the Vapor Cut-Off— Mop the exposed vapor cut-off felt liberally with hot *(coal tar pitch) (asphalt)*. Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Note: *Include (7b) only where high humidities are maintained.*

(7c) Two Layer Insulation

(7c1) Where insulation is laid in two (2) layers, the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with those of the first layer.

Nailing of two (2) layer insulation shall be through the second or top layer only. (Do not nail the first layer.)

Note: *Include (7c1) for insulation against heat loss only. Omit where high humidities are maintained.*

(7c2) Where insulation is laid in two (2) layers, the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with those of the first layer.

Mop the exposed surface of the first layer liberally (at least 25 lbs. per square) with hot *(coal tar pitch) (asphalt)*. Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Embed each board of the second layer firmly in the bituminous mopping.

Note: *Include (7c2) only where high humidities are maintained.*

(7d) Water Cut-Offs—

Note: *Advocated to prevent the spread of water beyond predetermined isolated areas in the event of leaks due to damage to the roofing or defective flashings, parapet walls, copings, etc.*

The insulation, whether laid in one (1) or two (2) layers, shall be cut to the line designated for the water cut-off.

Water cut-offs shall consist of strips of *(coal tar pitch) (asphalt)* saturated roofing felt 8 to 10 in. wide stuck in bitumen to the roof, carried over the edge of the insulation, and turned over and stuck in bitumen to the top surface of the insulation.

They shall be located approximately 22 in. from and parallel to all vertical walls, such as parapets, penthouses, skylight curbs, etc., and around all leader heads, soil pipes, vents, ventilators, etc. The body or field of the roof shall be divided into rectangular areas approximately 30 ft. on a side, each area isolated with a water cut-off. Insert a water cut-off surrounding each day's work if the stop is not made at the designated water cut-off.

At least one (1) ply of the finished roofing shall be mopped to the water cut-off each night.

(7e) Nails—Nails shall be of sufficient length to pass through the insulation and penetrate the wood roof deck at least 1 in.

Note: *Include (7e) for insulation against heat loss only. Omit where high humidities are maintained.*

(7f) Nailing—Space nails 12 in. apart O.C. Each board shall be secured in place by nailing along each edge and staggered along the longitudinal center line.

Note: *Include (7f) for insulation against heat loss only. Omit where high humidities are maintained.*

(8) APPLICATION OF ROOFING

The exposed surface of the Insulite Roof Insulation shall receive a poured coat of hot *(coal tar pitch) (asphalt)* squeegeed or broomed to about 1/16 in. thickness. Into this poured coat, while hot, the roofing felts shall be embedded.

Note: *The above in lieu of the ordinary mopping is advocated. Roofing shall be applied in accordance with the manufacturer's specifications as selected by the architect.*

INSULITE ROOF INSULATION Over Roof Decks of Monolithic Concrete or Gypsum or Roof Decks of Unit Tile Construction Under Built-up Roofing or Promenade Tile

Section . . . 7B
MASTER SPECIFICATIONS

(1) WORK INCLUDED

Note: *Same as Master Specification 7A, page 15.*

(2) INSULATION MATERIAL

Note: *Same as Master Specification 7A, page 15.*

(3) WOOD NAILING STRIPS

Note: *Same as Master Specification 7A, page 15.*

Note: *Omit this clause if finished roofing is of Promenade Tile.*

(4) ROOF DECK

(4a) General—The surface of the roof deck shall be reasonably smooth without depressions, broomed clean free from dirt and loose material and thoroughly dry.

(4b) Unit Tile Construction—The joints of all tiles shall be properly pointed up.

Note: *Include (4b) where deck is of cement, gypsum, book, or similar tile construction.*

(4c) Under Promenade Tile Roofing—

Note: *Slope for proper drainage may be provided in either of the two following methods: The first is preferable.*

(4c1) The roof slab shall be formed flat and the drainage slopes built up over the Insulite Roof Insulation with the finished promenade tile roofing and its mortar bed.

(4c2) The roof slab shall be formed graded to all outlets with cement mortar fill before the seal course and the Insulite Roof Insulation is laid.

(5) SEAL COURSE

Note: *Recommended on all insulated roof decks, other than wood, to afford protection from rain, snow and ice that the insulation and finished roofing may be applied under favorable weather conditions and only after all other trades have left the roof.*

(5a) Priming the Deck—Prime the deck with asphalt roofing primer.

Note: *Include priming if asphalt mopping and asphalt felt are used for seal course. If coal tar pitch and felt are used, no primer is necessary.*

(5b) Mopping the Deck—*(Mop the entire roof area) (Spot or strip mop the individual tiles or units)* with a coat of hot *(coal tar pitch) (asphalt).*

Note: *If the deck is monolithic construction (concrete, poured gypsum), the mopping shall be continuous. If the deck is of precast units (book tile, precast gypsum, concrete), spot or strip mop the individual units.*

(5c) Laying the Seal Course—Over the mopping while hot, lay one (1) layer of 14 lb. *(coal tar pitch) (asphalt)* saturated roofing felt with 2 in. laps. Turn the felt up 4 in. against all walls and vertical surfaces and stick with pitch and provide temporary thimbles at all leader heads, etc., to the end that the roof will be reasonably watertight against rain and melting snow. Do not mop over this membrane until just prior to the laying of insulation.

(6) APPLICATION OF INSULATION

(6a) Mopping the Seal Course—Mop the exposed seal course felt liberally with hot *(coal tar pitch) (asphalt).* Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

(6b) General—

Note: *Same as (7a) General, Master Specification 7A, page 15.*

(6c) Two Layer Insulation—Where insulation is laid in two (2) layers, the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with those of the first layer.

Mop the exposed surface of the first layer liberally (at least 25 lbs. per square) with hot *(coal tar pitch) (asphalt).* Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Embed each board of the second layer firmly in the bituminous mopping.

(6d) Water Cut-Offs—

Note: *Same as (7d) Water Cut-Offs, Master Specification 7A, page 15.*

(7) APPLICATION OF ROOFING

Note: *Same as (8) Master Specification 7A above.*

Insulite Roof Insulation over Concrete Roof Deck

Section . . . 7C
MASTER SPECIFICATIONS

INSULITE ROOF INSULATION
Over Steel Roof Decks Under Built-up Roofing

(1) WORK INCLUDED

Note: *Same as Master Specification 7A, page 15.*

(2) INSULATION MATERIAL

Note: *Same as Master Specification 7A, page 15.*

(3) WOOD NAILING STRIPS

Note: *Same as Master Specification 7A, page 15.*

(4) ROOF DECK

The steel deck shall be securely anchored to the roof purlins and all joints shall be made rigid.

(5) SEAL COURSE

Note: *Include this seal course if the rooms beneath the roof carry high manufactured or incidental humidities. Do not use coal tar pitch mopping on steel decks.*

(5a) Mopping the Deck—Mop the entire roof area with a coat of hot asphalt.

(5b) Laying the Seal Course—Over the mopping, while hot, lay one (1) layer of 14 lb. asphalt saturated roofing felt with 2 in. laps. Turn the felt up 4 in. against all walls and vertical surfaces and stick with pitch and provide temporary thimbles at all leader heads, etc. to the end that the roof will be reasonably watertight against rain and melting snow. Do not mop over this membrane until just prior to the laying of insulation.

(6) APPLICATION OF INSULATION

(6a) Mopping the (*Seal Course*) (*Steel Deck*)—Mop the exposed *(seal course felt) (steel deck)* with hot asphalt. Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Note: *Do not use coal tar pitch mopping on steel decks.*

(6b) General—

Note: *Same as (7a) General, Master Specification 7A, page 15.*

(6c) Two Layer Insulation—Where insulation is laid in two (2) layers, the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with those of the first layer.

Mop the exposed surface of the first layer liberally (at least 25 lbs. per square) with hot asphalt. Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Embed each board of the second layer firmly in the bituminous mopping.

(6d) For Steep Decks—In addition to the mopping, each Insulite board shall be secured to the steel deck with three (3) bolts along the top.

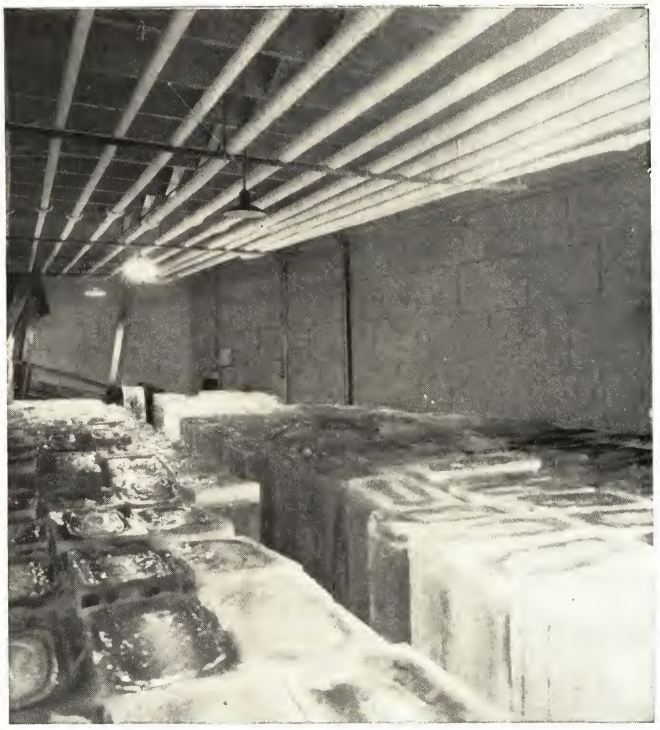
(6e) Water Cut-Offs—

Note: *Same as (7d) Water Cut-Offs, Master Specification 7A, page 15.*

(7) APPLICATION OF ROOFING

Note: *Same as (8) Master Specification 7A, page 16.*

Sealdslab in Fruit and Grocery Storage Room



Sealdslab in Ice Storage Room

INSULITE COLD STORAGE INSULATION

Section . . . 8
MASTER SPECIFICATIONS

Note: *For physical characteristics, see page 2. For description, dimensions, etc., see pages 3 and 4.*

Note: *The maintenance of high thermal insulating efficiency in all types of cold storage construction is to a large degree dependent on quality workmanship, careful application and strict adherence to specifications.*

(1) WORK INCLUDED

Note: *Here list and locate definitely the floor, wall, and ceiling areas to be insulated. If more than one thickness is used, list separately and the respective locations or areas.*

(2) MATERIALS

Insulation shall be Insulite *(Ins-Light) (Sealdslab)* Cold Storage Insulation as made by The Insulite Company, Minneapolis, Minn.; units shall be *(here specify thickness and size as best adapted to the particular area to be insulated).* Asphalt shall be an approved grade of odorless asphalt. For hot application, melting point of asphalt shall be between 160° and 200° F.

Note: *Hot asphalt shall preferably be used for the erection of Insulite (Ins-Light) (Sealdslab) Cold Storage Insulation.*

All nails shall be galvanized or zinc coated. Nails to hold Insulite to wood nailing members shall be of sufficient length to penetrate nailing member at least 1 in. Nails to secure successive layers of Insulite on ceilings shall be ½ in. longer than combined thickness of both layers and driven at an angle of 45 degrees.

(3) GENERAL SPECIFICATIONS

(3a) Preparation of Surfaces—All surfaces shall be dry, even, and free of all loose materials. All masonry surfaces shall be primed with an approved grade of asphalt primer and allowed to dry until tacky before applying insulation. All wood surfaces shall be securely nailed, free from large cracks and knot holes and covered with a membrane consisting of two thicknesses of waterproof paper nailed to surface. Edges of paper to be lapped at least 2 inches.

(3b) Cutting—All cutting and fitting shall be done in a neat, workmanlike manner. Cutting shall be done with a fine tooth sharp saw with minimum "set" on teeth, using rapid strokes and a minimum of pressure. (A power saw is preferable.)

(3c) Dipping—All Insulite Cold Storage Insulation units shall, immediately prior to their application, be dipped in hot asphalt. Face and all edges of units to be bonded to wall or adjoining units shall be thoroughly coated.

Note: *Above is advocated irrespective of added coats of asphalt applied after units are erected. Successive coatings of waterproofing are much more effective barriers to infiltration of air and moisture than thick single coatings for the reason that air pockets and bubbles occurring in one coat are sealed up by the next.*

(3d) Application—General—(Also see specifications for floors, walls, and ceilings, (4a), (4b), (4c), (4d), and (4e).)

Units of insulation shall be tightly butted together with all joints broken or staggered. In two-layer work the second layer must break joints with the first. All insulation to be continuous where possible and there shall be no through joints, particularly at intersection of walls with floors and ceilings.

After thoroughly coating with asphalt, slide units into position and spank or firmly press units to insure uniform adhesion for first and all succeeding layers.

On walls and ceilings of frame construction over sound wood sheathing, first layer of insulation, after dipping in asphalt, shall be secured in place with two nails per square foot. Second and succeeding layers of insulation shall be secured to preceding layer of insulation with not less than one nail per square foot. Nailing of second and succeeding layers of wall insulation is optional and may be omitted.

(3e) Surface Finishes—All Insulite *(Ins-Light) (Sealdslab)* Cold Storage Insulation exposed surfaces (except floors) shall be given a finish of not less than ⅛ inch of an approved asphalt mastic applied in accordance with manufacturer's specifications in not less than two coats or not less than ½ inch of Portland cement plaster applied in two coats and containing an integral waterproofing (used in proportions as directed by the manufacturer). When Portland cement is used as a finish, the surface to receive the plaster shall have emulsified asphalt applied in accordance with asphalt manufacturer's recommendations on grade and coverage.

Note: *Recommended precaution: Reinforce the Portland cement plaster with a light wire mesh by tacking only sufficiently to hold it in place over the surface of the insulation before applying the first coat of plaster.*

Second or finish coats of Portland cement plaster shall be scored vertically and horizontally to control cracks and all external corners shall be protected with metal corner beads or angle iron.

Where surfaces are subject to abrasion or damage by trucks, barrels, etc., buffers of plank or other suitable material shall be provided over finished surface.

(4) DETAILED SPECIFICATIONS

(4a) Floors—The prepared surface shall be flooded with hot asphalt to a uniform coating. While asphalt is still hot, apply first layer of insulation. The second and succeeding layers shall be secured together in a like manner. Apply flood coat of asphalt over final layer of insulation, and pour *(specify)* inches of concrete as subfloor. Wearing surface of concrete or other types of floor covering to be applied over concrete subfloor.

(4b) Masonry Walls—All uneven surfaces shall be given a leveling coat of Portland cement plaster or asphalt mastic to a true and even surface.

Note: *Follow specifications (3a), (3b), (3c), (3d), and (3e) as they apply to this type of construction.*

(4c) Frame Walls—

Note: *Follow specifications (3a), (3b), (3c), (3d), and (3e) as they apply to this type of construction.*

(4d) Frame Ceilings—Each unit of the layers of insulation succeeding the first layer shall be shored in place until asphalt has set sufficiently to hold.

Note: *Follow specifications (3a), (3b), (3c), (3d), and (3e) as they apply to this type of construction.*

(4e) Concrete Ceilings—

(4e1) New Construction—Provide anchorage in slab such as wood sleepers, bolts, or clips to which shall be fastened a series of kiln dried preservative treated wood strips the same thickness as the first layer of insulation, and spaced with exact clear space between strips to accommodate width of insulation units.

(4e2) Existing Construction—Drill slab and insert expansion bolts not less than ¼ in. in diameter to receive series of wood strips. Bolts along each strip to be not more than 4 ft. O.C. Thickness, type, and spacing of wood strips shall be same as (4e1).

Dip first layer of insulation in hot asphalt and apply between the wood strips, toe-nailing through units into wood at each edge not more than 12 in. O.C. Dip second layer of insulation in hot asphalt and apply at right angles to the first layer and nail not more than 12 in. O.C. to the wood strips in the first layer. Each unit of succeeding layers of insulation shall be shored in place until asphalt has set sufficiently to hold, and all units nailed to preceding layer of insulation with not less than one nail per square foot.

Note: *Follow specifications (3a), (3b), (3c), (3d), and (3e) as they apply to this type of construction.*

Note: *The Insulite Company tenders full cooperation of its Engineering Department on special constructions and all problems involved in cold storage and refrigeration insulation.*

INSULITE

TRUCTURAL INSULATION

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JOHNS-MANVILLE

EXECUTIVE OFFICES

22 East 40th Street, NEW YORK, N. Y.

Member of The Producers' Council, Inc.

Products

JOHNS-MANVILLE INSULATING BOARD, $\frac{25}{32}$" INSULATING BOARD SHEATHING, INSULATING LATH, DECORATIVE INSULATING BOARD, HARD BOARD and PANLBOARD.

For the following Johns-Manville products, see File Index: Acoustical Treatment and Sound Isolation; Asbestos and Asphalt Shingles; Built-up Roofs; Roof Insulation; Home Insulation; Pipe Coverings and Insulations; Tile Flooring; Transite, Flat and Corrugated Sheets; Asbestos Wainscoting and Asbestos Flexboard.

JOHNS-MANVILLE INSULATING BOARD PRODUCTS

J-M Insulating Board

Johns-Manville Insulating Board is a knotless, grainless, all-wood fibre board that possesses great strength. Because it is made in large units (4 ft. wide, 4 to 12 ft. long) and is so easily applied, it simplifies the construction, modernization and decoration of all types of interiors.

J-M Standard Insulating Board is available in the interesting texture of the natural finish, and in the new glaze-coat finish, a smooth buff color, which can be painted, stained or stencilled without priming.

The natural color of J-M Insulating Board is a pleasing buff that harmonizes with practically any decorative scheme. The surface texture suggests the interesting feeling of wall fabric. For this reason, as well as for economy, it is often applied without paint or other finish. Where special effects are desired, it can be painted or stained to suit. It yields readily to cutting with beveling tools, and can be decorated in this manner on the job. Joints may be beveled, or concealed with battens. For unbroken surfaces, the material may be covered with painters' cloth, and the whole area painted.

J-M $\frac{25}{32}$" Insulating Board Sheathing, in large size sheets, is easily and economically erected

J-M $\frac{25}{32}$" Insulating Board Sheathing is made to conform to millwork standards and designed for use as sheathing under wood siding, stucco, masonry veneer or, with furring, under shingles. Because it is made in sheets 4 ft. wide and in convenient lengths of 8, 10 and 12 ft., it enables workmen to cover large areas in one-third the time ordinarily taken by wood sheathing.

Besides substantially reducing labor costs, J-M $\frac{25}{32}$" Insulating Board Sheathing insulates the home against heat and cold.

A modernized living room with Insulating Board ceiling and Bevel Plank walls is an attractive improvement at little cost

J-M Batten Strips

Batten strips of beveled Glaze-Coat Insulating Board are available in 2½-in. widths, in lengths of 8, 10 and 12 ft., for paneling with sheets of Insulating Board.

J-M Insulating Lath

J-M Insulating Lath is the same material as Insulating Board, except that it is furnished 18x48 in., with long edges ship-lapped, and all face edges beveled. It is applied with the "gridded" surface exposed. Plaster bonds to it with a strength far greater than the key of plaster on wood lath. J-M Insulating Lath provides a solid, unbroken surface which prevents unsightly lath marks and also results in a saving in plaster and labor.

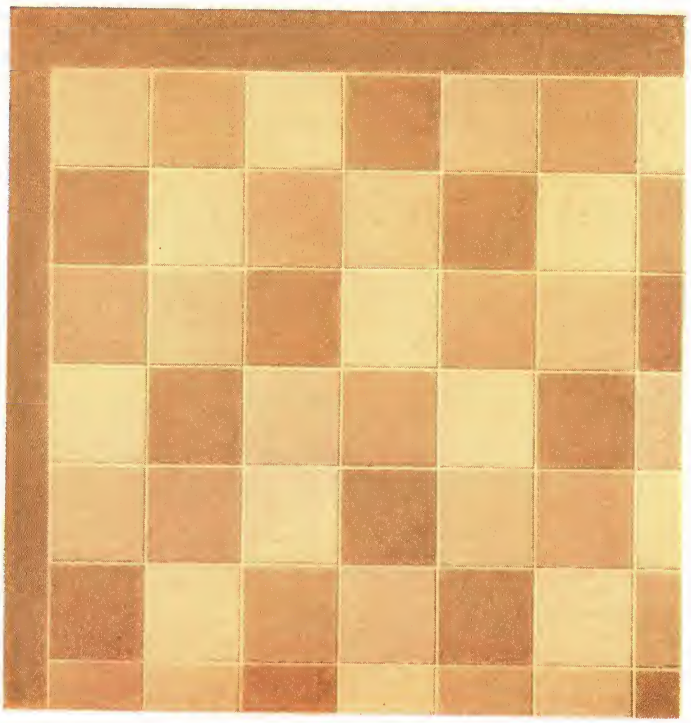
J-M DECORATIVE INSULATING BOARD

Decorative Ceiling Tile, Bevel and Multiple Bevel Tile, Bevel and Beaded Bevel Plank and Ashlar Strips

JOHNS-MANVILLE INSULATING BOARD is one of the most economical materials available for interior decoration. Made of compressed wood fibre, it can be applied directly to the framing in new construction, or right over the old walls and ceilings in remodeling work. It is made in various sizes, with a light fabric texture or Glaze-Coat finish, and in a number of patterned styles, including plain and beaded Bevel Plank; Glaze-Coat, Variegated and textured Bevel Tile; and Ashlar Strips. For special designs, the large sheets can be decorated by the contractor, using a cutting tool developed for this work.

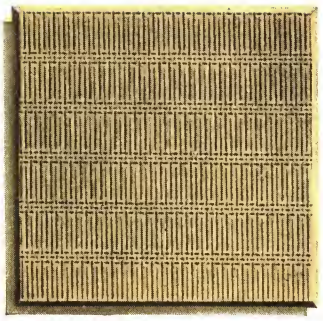
New Coated Surface

The new Glaze-Coat and Variegated finishes are obtained by an exclusive process recently developed by Johns-Manville. In addition to supplying color to the surface, this process actually "irons" the board, thereby giving the surface a lustrous, light-reflecting sheen. As shown in the illustrations, the Glaze-Coat finish is a warm sand color. It requires no further treatment unless special color schemes are desired. It eliminates the need for a priming coat under paint. The Variegated finish is a blend of four harmonizing tones. To emphasize the design, all bevels and grooves are left in the natural color of the board.



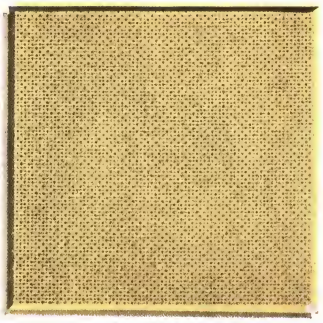
Ceiling of Variegated Bevel Tile

All J-M Insulating Board Products can be used for ceilings, as well as walls. Two of them, the Decorative Ceiling Tile, and the Multiple Bevel Tile are specially suitable for ceiling work. Because they can be applied without tearing off the old plaster, these products fill a long-felt need in the remodeling field.

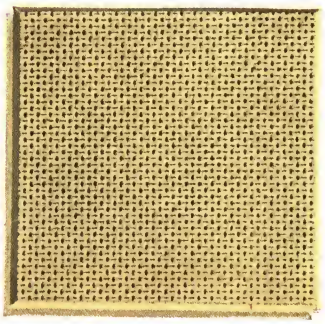


Wicker

Glaze-Coat



Medium Fabric

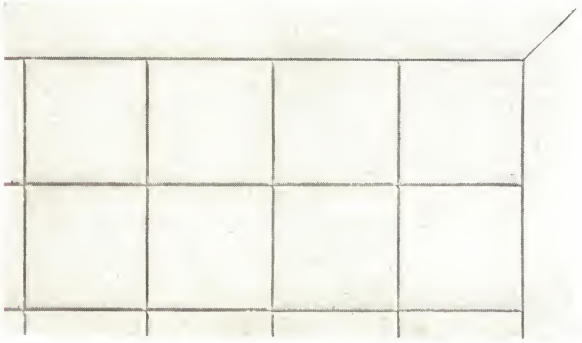


Coarse Fabric

J-M Bevel Tile

Sizes: 12x12 in.; 12x24 in.; 16x16 in.; 16x32 in.; 24x24 in. and 24x48 in. (Wicker finish available only in 12x12 in.; 16x16 in. and 24x24 in.)

Thickness: ½ in. in all sizes. All edges beveled and ship-lapped.



J-M Multiple Bevel Tile

Sizes: 24x24 in., V-grooved 8x8 in. and 12x12 in.; 24x48 in., V-grooved 8x8 in., 12x12 in. and 12x16 in.; 16x32 in., V-grooved 16x16 in.

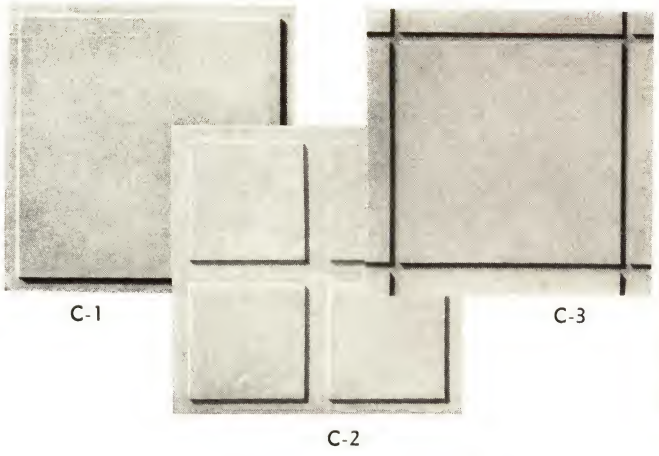
Thickness: ½ in. in all sizes.

Glaze-Coat finish with all edges beveled and ship-lapped.

J-M Border Strip

(For "framing" ceiling designs)

12 in. x 8 ft. x ½ in. thick, with long edges beveled and ship-lapped. Face sanded or Glaze-Coat finish, or brown finish for Variegated Blend.



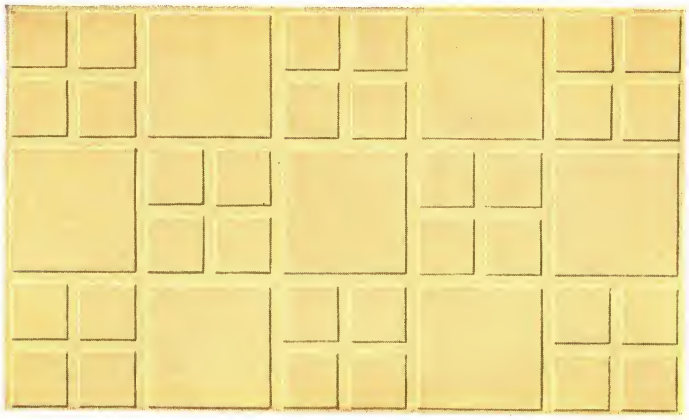
J-M Decorative Ceiling Tile

16x16 in., ½ in. thick, Glaze-Coat finished, square edges. Furnished in three designs: C-1, C-2 and C-3. Packed 60 pieces per carton.

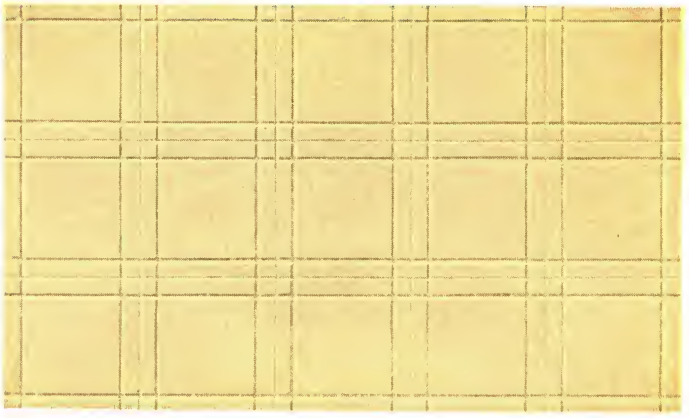
Ashlar Strips

6 in. wide x 4 ft. long, ½ in. thick. Glaze-Coat finish on face, joints natural, with diagonal bevel end-joints. Packed 36 pieces, 72 sq. ft., per carton.

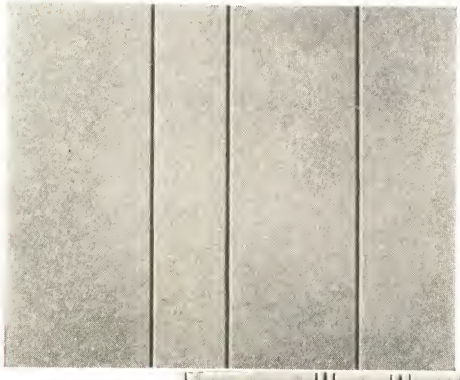
Paneled wall of Standard Sheets in Glaze-Coat finish



Combination of designs C-1 and C-2



Over-all design made with C-3 Tile



Bevel Plank

Beaded Bevel Plank

Random widths of 6, 8, 10 and 12 in. x 8, 10 and 12 ft. long, ½ in. thick. Glaze-Coat finish with diagonal bevel joints on long edges. 8 ft. length packed 72 sq. ft. per carton; 10 ft., 90 sq. ft.; 12 ft., 108 sq. ft.

JOHNS-MANVILLE HARD BOARD AND PANLBOARD

J-M Hard Board

J-M Hard Board is a grainless, knotless, all-wood fibre board, unusually strong and yet so decorative in color and finish that it is used as wall treatment in the finest homes. Its hard glossy surface is highly resistant to abrasion and wear; it has a tensile strength of approximately 3500 lbs. per sq. in. Its high resistance to moisture makes it adaptable for innumerable outdoor uses. It will not warp, crack, split or splinter, and works easily with ordinary carpenter's tools.

Tempered Hard Board—Standard J-M Hard Board impregnated with a special compound and heat-treated. The tempered material is recommended where an even harder, stronger, more moisture resistant board is desired. For fine scroll work or intricate machining, Tempered Hard Board works to even a cleaner edge than the standard material.

Scored Tempered Hard Board—Is available in $\frac{1}{8}$ in. thickness only, in 4x12 ft. sheets scored in 4 in. squares.

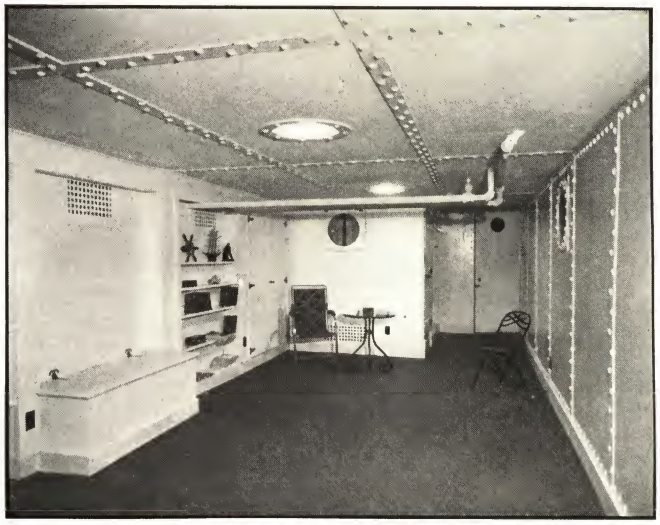
Color—J-M Hard Board is a pleasing brown in color. It has a natural hue and finish which are ideal for interior decorative purposes without further treatment.

Either type of board may be painted, stained, varnished or waxed, as desired. Tempered Hard Board requires no priming coat.

Uses—Among the practically countless uses for J-M Hard Board are the following: paneling, partitions, shelving, window displays, store counters, folding screens and table tops.

Sizes—J-M Hard Board and Tempered Hard Board are furnished in $\frac{1}{8}$ in. and $\frac{3}{16}$ in. thicknesses, in sheets 4 ft. wide x 1, 2, 3, 4, 6, 8, 9, 10, and 12 ft. long; also in $\frac{1}{4}$ and $\frac{5}{16}$ in. thicknesses, in sheets 4 ft. wide x 12 ft. long.

Standard and Tempered Hard Board make a most attractive finish for the walls of this tavern. The ceiling is of J-M Decorative Ceiling Tile



Hard Board was chosen for the walls of this basement room because it resists abuse and takes paint so readily

Hard Board is an ideal material for the construction of children's playhouses, summer cottages and other small outdoor buildings

J-M Standard and DeLuxe PanLboard

For uses where the exceptional strength and density of Hard Board are not required, Johns-Manville supplies two economical boards, known as Standard and DeLuxe PanLboard.

PanLboard—A dense, tough sheet material with a hard and attractive surface, a rich brown in color, and especially suited for use as a wall or ceiling finish.

DeLuxe PanLboard—Is an even tougher, denser product than PanLboard, with a smooth, hard surface though not as dense as J-M Hard Board.

Both types are furnished $\frac{1}{4}$ in. thick only, 4 ft. wide x 1, 2, 3, 4, 6, 8, 9, 10, and 12 ft. long.

Genuine

MASONITE

STRUCTURAL INSULATION

MASONITE CANEC—MASONITE ROCK WOOL

INSULATING LATH—QUARTRBOARD

PRESDWOOD—TEMPRTILE

1938

MASONITE *Corporation*

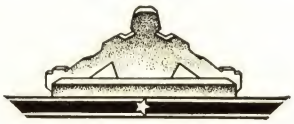
111 *W. Washington Street*, CHICAGO, ILLINOIS

MASONITE Corporation

111 W. Washington Street, CHICAGO—ILLINOIS.

PRODUCTS

MASONITE STRUCTURAL INSULATION MASONITE INSULATING LATH MASONITE TEMPRTILE MASONITE CENTURY OF PROGRESS FLOORING MASONITE QUARTRBOARD MASONITE DE LUXE QUARTRBOARD MASONITE DUBBLSEAL SHEATHING MASONITE CANEC INSULATION MASONITE PRESDWOOD, (UNTEMPERED) 1/10 in., 1/8 in., 3/16 in., 1/4 in., 5/16 in. THICKNESSES MASONITE TEMPERED PRESDWOOD, SAME THICKNESSES



MASONITE INSULATION

Its Manufacture and Adaptability

Masonite products are manufactured boards made entirely of wood fibre. They possess the natural strength and composition of wood but are without grain and other defects found in wood.

In the production of these scientific wood products, clean wood chips are exploded under high pressure steam so that the wood is reduced to fibre. The product thus produced consists entirely of lignocellulose fibres, their strength unimpaired, and the lignin or natural cement structure of the wood entirely retained. No chemicals are used, and the exploding process is purely a physical one, so that there is no change in the wood except tearing it apart into natural fibers.

These fibers are refined, felted and pressed in flat bed heated hydraulic presses into board form. No binder is added, the natural cementing matter or lignin of the wood being used to bond the fibers together. Pressure is applied hydraulically until the required degree of density is obtained, the heat of the platens in the presses driving off all of the moisture. It is possible, therefore, to fabricate Masonite products in various degrees of density and thickness, suiting the formation to the service the board is to perform.

Insulation Values

The thermal conductivities of Masonite products have been determined by Professor J. C. Peebles of Armour Institute of Technology, using the hot plate method of test, expressing the results in B.t.u. per inch of thickness, per square foot, per degree Fahrenheit difference, per hour.

MASONITE Structural Insulation	.328 B.t.u.
Canec Insulation	.33 B.t.u.
Quartrboard	.55 B.t.u.
Presdwood (Untempered)	1.40 B.t.u.
Tempered Presdwood	1.50 B.t.u.

Where to Use MASONITE Products

Only a few of the uses of Masonite Products are discussed here. The most common use of Masonite Insulation is as sheathing under frame, brick, stone, or stucco exterior walls. Masonite Dubblseal Sheathing Board $^{25}/_{32}$ in. thick is recommended for greater insulation and greater strength. It is protected against moisture by a double seal of waterproof asphalt.

Labor costs are reduced by the increased rapidity and ease with which the big, uniform boards go into place. Also waste is cut to the irreducible minimum.

Masonite is also furnished as a base for plaster. It is furnished in sizes 12 in., 18 in., or 24 in. x 48 in. and in ½ in. and 1 in. thicknesses. Masonite Insulating Lath in ½ and 1 in. thicknesses is furnished in bundles of 100 and 50 square feet respectively, and is shiplapped along both 4 ft. edges. Applied in staggered arrangement, it makes an exceedingly strong, rigid base. The plaster bond is greater than 1000 pounds per square foot of surface.

Masonite Insulation products are highly resistant to moisture. Tests made by the Robert W. Hunt Company for water absorption where the samples were completely immersed in water report 2.59% by volume at the end of four hours, 7.16% at the end of 24 hours, and 15.8% at the end of 72 hours. Shrinking and swelling of these products are practically negligible.

The surface and color of these Masonite products make them

COCKTAIL BAR, BOOK-CADILLAC, HOTEL—DETROIT

particularly suitable for use as interior finish. They are smooth with just enough texture and mottling to provide an interesting surface. These products may be left in their natural state or may be given many types of finish, a few of which are covered in the following pages. Being true wood products, they possess permanence and a look of permanence that is quite uncommon in partitions constructed of somewhat similar products.

Masonite Insulation is also used to reduce heat losses through roofs of homes or larger buildings. It may be applied under or over wood rafters, concrete, wood, gypsum, or steel decks. Special sizes suitable for this application are available.

On another page there is presented a chart giving exact figures of heat losses in a few of the different types of roofs, showing how these heat losses may be reduced and brought under control. Also, the thickness of Insulation required to prevent condensation.

Where Masonite Insulation is used on walls, ceilings, and floors, it has another important function along with its structural and heat insulation values. It is an invaluable material for the control of sound. With the increasing demand for soundproof construction, it is especially interesting to note that the use of Masonite provides excellent results with little additional cost.

Testing the reduction of sound intensity through different (standard) types of partitions, Dr. Paul E. Sabine of Riverbank Laboratories, Geneva, Illinois, found that a 4-in. clay tile plastered partition weighing 28 pounds per square foot had a reduction of 34 decibels, while through a partition of Masonite Insulation on wood studs plastered, the weight was 17 pounds per square foot, and the reduction was 35.1 decibels.

COCKTAIL BAR, BOOK-CADILLAC HOTEL—DETROIT WALLS PRESDWOOD PAINTED CANARY, CHROMIUM STRIPS ON JOINTS BLACK CARPET AND DRAPERIES

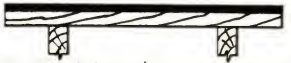
Masonite Insulation also has an unusually high rating as a sound absorbent material. Tests made by the Riverbank Laboratory of Geneva, Illinois on material purchased from lumber dealers' stocks reveal the unusually high efficiency of this material in the following chart:

FREQUENCY	128	256	512	1024	2048	NOISE REDUCTION COEFFICIENT
Standard Masonite Insulation 24 in. O.C.	.20	.46	.33	.37	.37	.40
Standard Masonite Insulation 16 in. O.C.	.28	.42	.40	.32	.43	.40

HEAT LOSSES

THROUGH VARIOUS ROOF CONSTRUCTIONS

—INSULATED and UNINSULATED—

TYPE OF ROOF INSULATION Reference to this heat loss chart will show at a glance that a five-ply pitch and gravel roof with a 7/8-in. wood deck will lose a coal value of 6.79 tons per thousand feet of area in one heating season, when exposed to an average difference in temperature of 40° and uninsulated. The same roof, insulated with one layer of Masonite, loses only 3.92 tons during one heating season.		Conductivity -K-	Percent Saving Due To Insulation	Sq. Ft. of Radiation Required Per 1000 Sq. Ft. Roof Area For 10° Difference In Temperature Multiply Amount Shown By Diff. in Temp / 10		Heat Losses In Tons Of Coal Per 1000 Sq. Ft. Of Roof Area, Per 210 Days At Differences Of Temperature Shown. Calculations Are Based On Average Heating Value Of Coal 12000 B.T.U. And Furnace Efficiency Of 60%. Temperature Difference — F									
				Steam	H.Water	10°	20°	30°	40°	50	60°	70°	80°	90°	100°
 5 Ply Pitch & Gravel Roof 7/8" Wood Deck (Soft Wood)	None	.485		20.02	30.32	1.70	3.39	5.10	6.79	8.50	10.19	11.89	13.58	15.27	17.00
	One Layer MASONITE	.280	42%	11.67	17.50	.98	1.96	2.94	3.92	4.90	5.87	6.84	7.83	8.82	9.80
	Two Layers MASONITE	.196	60%	8.16	12.50	.68	1.37	2.06	2.74	3.43	4.12	4.79	5.48	6.15	6.85
 5 Ply Pitch & Gravel Roof 1 3/4" Wood Deck (Soft Wood)	None	.345		14.37	21.57	1.20	2.40	3.62	4.83	6.04	7.24	8.45	9.65	10.85	12.05
	One Layer MASONITE	.226	35%	9.42	14.22	.79	1.58	2.37	3.16	3.96	4.75	5.54	6.33	7.12	7.92
	Two Layers MASONITE	.168	51%	7.00	10.50	.59	1.17	1.76	2.35	2.94	3.52	4.12	4.70	5.29	5.88
 5 Ply Pitch & Gravel Roof 2" Concrete Deck	None	.658		27.40	41.13	2.31	4.61	6.90	9.22	11.50	13.81	16.11	18.41	20.72	23.06
	One Layer MASONITE	.330	50%	13.75	20.61	1.15	2.30	3.45	4.61	5.75	6.90	8.05	9.20	10.36	11.53
	Two Layers MASONITE	220	67%	9.16	13.75	.77	1.54	2.30	3.08	3.84	4.61	5.37	6.14	6.92	7.70
 5 Ply Pitch & Gravel Roof 3" Concrete Deck	None	.610		25.40	38.17	2.13	4.27	6.40	8.54	10.68	12.81	14.95	17.10	19.20	21.35
	One Layer MASONITE	.317	48%	13.21	19.80	1.11	2.22	3.32	4.43	5.54	6.65	7.75	8.86	9.97	11.08
	Two Layers MASONITE	.214	65%	8.92	13.38	.75	1.50	2.24	2.99	3.74	4.50	5.24	5.99	6.74	7.49
 5 Ply Pitch & Gravel Roof 4" Concrete Deck	None	.568		23.65	35.75	1.99	3.98	5.96	7.95	9.94	11.92	13.90	15.89	17.88	19.86
	One Layer MASONITE	.306	46%	12.75	19.13	1.07	2.14	3.21	4.28	5.35	6.42	7.49	8.56	9.63	10.72
	Two Layers MASONITE	.209	63%	8.71	13.08	.73	1.46	2.19	2.92	3.65	4.38	5.11	5.84	6.57	7.32
 5 Ply Pitch & Gravel Roof 6" Concrete Deck	None	.500		20.81	31.25	1.75	3.50	5.25	7.00	8.75	10.50	12.25	14.00	15.75	17.50
	One Layer MASONITE	.285	43%	11.88	17.82	.99	1.98	2.97	3.96	4.95	5.94	6.93	7.92	8.91	9.90
	Two Layers MASONITE	.199	60%	8.29	12.45	.70	1.40	2.10	2.80	3.50	4.20	4.90	5.60	6.30	7.00
 5 Ply Pitch & Gravel Roof 2"Concrete 6"Hollow Tile	None	.495		20.62	30.95	1.73	3.46	5.19	6.92	8.65	10.38	12.11	13.84	15.57	17.30
	One Layer MASONITE	.292	41%	12.15	18.25	1.02	2.04	3.06	4 08	5.10	6.12	7.14	8.16	9.18	10.20
	Two Layers MASONITE	.207	58%	8.62	12.93	.72	1.44	2.16	2.88	3.60	4.32	5.04	5.76	6.48	7.20

CONDENSATION CHART

The following example will explain the condensation chart. On a roof of five-ply pitch and gravel type, condensation starts at a relative humidity of 50% when the difference in temperature is 70° and the roof is uninsulated. Insulated with one layer of Masonite, the same roof under the same conditions would show no condensation up to a humidity of 70%, while two layers of Masonite would resist humidity up to 80%.

CHART SHOWING WHETHER OR NOT CONDENSATION WILL FORM ON BOTTOM OF DECK
Black Indicates Danger Of Condensation
White Indicates No Condensation

TYPE OF ROOF	Uninsulated	With One Layer Of MASONITE	With Two Layers Of MASONITE
	Percent Relative Humidity 10 20 30 40 50 60 70 80 90	Percent Relative Humidity 10 20 30 40 50 60 70 80 90	Percent Relative Humidity 10 20 30 40 50 60 70 80 90
5 Ply Pitch & Gravel Roof $\frac{7}{8}$" Wood Deck (Soft Wood)			
5 Ply Pitch & Gravel Roof $1\frac{3}{4}$" Wood Deck (Soft Wood)			
5 Ply Pitch & Gravel Roof 2" Concrete Deck			
5 Ply Pitch & Gravel Roof 3" Concrete Deck			
5 Ply Pitch & Gravel Roof 4" Concrete Deck			
5 Ply Pitch & Gravel Roof 6" Concrete Deck			
5 Ply Pitch & Gravel Roof 2" Concrete 6" Hollow Tile			

Temperature Difference: 10 20 30 40 50 60 70 80 90

APPLICATION SPECIFICATIONS

Sheathing

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MASONITE DUBBLSEAL SHEATHING BOARD UNDER SIDING, SHINGLES, STUCCO, BRICK OR STONE VENEER

MATERIAL

The material shall be Masonite Dubblseal Sheathing Board $^{25}/_{32}$ in. thick manufactured in 4 ft. widths by 5, 6, 7, 8, 9, 10, and 12 ft. in length as manufactured by the Masonite Corporation, Chicago, Illinois.

FRAMING

Studs, joists, sills, and plates shall be framed as in ordinary frame construction, spaced accurately 12 or 16 in. O.C. Insert 2 x 4 in. headers to provide bearing for end joints as all edges must be supported. No extra cross bracing other than commonly used is required. Fire stops are recommended.

APPLICATION

Masonite boards shall be applied with the long dimension parallel with and directly to the studding, rafters or joists. Boards shall be spaced $^{3}/_{16}$ in. apart at sides, top and bottom. Do not force boards into place. Cut Masonite to fit snugly around rafters that project beyond face of studs. Any narrow widths required to make over-all lengths shall be located in or near the middle of the wall.

NAILING

Beginning in center, nail Masonite first to intermediate studs, then edges and ends. Use galvanized 2 in. roofing nails with $^{3}/_{8}$ in. head, spaced approximately 6 in. apart through the body of the board, 3 in. apart, and $^{3}/_{8}$ in. in from the edges and ends. Drive nail head flush with surface of board.

MASONITE INSULATION APPLIED AS SHEATHING PROVIDES STRUCTURAL STRENGTH, LOWERS HEATING COSTS BY STOPPING HEAT LOSSES, AND ASSURES GREATER YEAR ROUND COMFORT.

WOOD SIDING

Apply wood siding directly over Insulation, nailing into the studs. Joints in siding shall butt on center of studs.

SHINGLE WALLS

Furring strips of 1 x 2 in. lumber spaced to the proper shingle weathering shall be applied horizontally over the Insulation and nailed through into the studs. Shingles shall be secured to furring strips in accordance with shingle manufacturer's specifications.

STUCCO FINISH

Preparatory to application of stucco, cover Insulation with asphalt saturated waterproof paper. Then apply approved steel stucco base, nailing through to studs. Flash overhead casings of all windows and doors with metal. No stucco shall be applied direct to Masonite Insulation on exterior surfaces. Stucco shall be applied in accordance with stucco manufacturer's specifications.

BRICK OR STONE VENEER

Shelf angles for the support of lintels, etc. and metal wall ties shall be nailed through Masonite Insulation into studs only. **Do not nail between studs.** Brick or stone shall be set out at least ½ in. from the face of the Insulation.

APPLICATION SPECIFICATIONS

Lath

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MASONITE INSULATING LATH AS PLASTER BASE

MATERIAL

Material shall be Masonite Insulating Lath ½ or 1 in. thick, sizes 12, 18, 24 x 48 in. The long dimension edges shall be shiplapped.

FRAMING

Studs, joists, rafters, and plates shall be framed as in ordinary frame construction. All supports shall be spaced accurately on 12 or 16 in. centers.

APPLICATION FOR FRAME CONSTRUCTION

Masonite Insulating Lath shall be applied with the long dimension at right angles to the supports. Apply boards to break joints, spaced ⅛ in. apart at all ends. Bring shiplapped edges to moderate contact. Do not force boards into place. Around window or door frames, bring Masonite Lath to moderate contact with jamb, head, and sill. All re-entrant angles shall be protected with metal lath (corner right) from floor to ceiling and where side walls meet ceiling. Metal lath shall be nailed through Masonite into studs. Corner beads shall be used on all outside corners, nailed through Insulation into wood supports. The center joint of all room ceilings shall be covered with a piece of rib lath centered over the joint. Only one rib shall be used. Allow portion of expanded lath to extend on each side. Rooms over 16 ft. wide shall have two additional strips spaced midway between the center strip and the wall. All strips shall run the long direction of the room.

GOOD PLASTER PROPERLY APPLIED TO MASONITE INSULATING LATH ASSURES A PERMANENTLY SATISFACTORY JOB.

APPLICATION for MASONRY CONSTRUCTION

Wood furring strips 1 x 2 in. shall be applied vertically, secured in the usual manner, to the masonry walls spaced 12 or 16 in. O.C.

Note: Application of Masonite Lath to furring strips shall be as specified in Application for Frame Construction.

NAILING

Nail ½ in. Masonite Insulating Lath with 4d box nails or No. 13 gauge $\frac{5}{16}$ in. head blued fibre board nails. Nail 1 in. lath with 6d box nails. Space nails approximately 4 in. apart and ⅜ in. from the ends. Nail intermediate supports first before nailing ends.

PLASTER

Standard gypsum cement or gypsum wood fibered plaster shall be used for scratch and brown coats in full ½ in. thickness. Over this apply a standard finish as desired.

Apply plaster to full ½ in. finish thickness. Provide adequate ventilation for the proper drying of the plaster and sufficient heat where necessary to prevent damage by frost.

Plaster should set in about 1½ and not to exceed two hours.

The plasterer shall use the darby in the direction of the supports and it shall be of sufficient length to span two or more supports.

Note: Do not wet Masonite Insulating Lath before applying plaster. Lime plaster is not recommended.

APPLICATION SPECIFICATIONS

Interior Finish

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MASONITE STRUCTURAL INSULATION, MASONITE BEVELED TILE, MASONITE BEVELED PLANK, MASONITE QUARTRBOARD, MASONITE DE LUXE QUARTRBOARD, MASONITE CANEC INSULATION

MATERIAL

All interior walls and ceilings shall be covered with Genuine Masonite (list here product desired) as manufactured by the Masonite Corporation, Chicago.

FRAMING

Space framing as may be necessary to meet layout of interior finish but not over 12 or 16 in. O.C. Where horizontal joints in the boards are necessary, use 2 x 4 in. headers cut in between the studs. Use straight lumber of uniform thickness. Consideration shall be given for the design of the paneling desired, using extra supports if necessary. Headers shall be installed back of chair rails and all similar molded trim. Fur masonry walls similarly with 1 x 2 in. strips shimmed to a true level plane.

APPLICATION

The Masonite boards shall be applied directly to the framework members, allowing ample bearing surface for nailing on all edges, horizontal joints shall only be made over frame headers. Boards shall be brought to moderate contact at sides, top and bottom.

Do not force boards into place.

Around window and door frames and where tight joints are required, bring Masonite products only to moderate contact.

NAILING

Beginning in the center, nail Masonite boards to intermediate studs with 1¾ in. casing head nails driven at a 30 degree angle every 6 inches. Heads shall be countersunk with nail-set. When joints are covered with battens, the edges of the boards may be nailed with 4d box nails. When beveled edges are used without battens, nail edges with 1¾ in. casing head nails spaced 4 in. apart.

INTERIOR OF MASONITE INSULATION IN LIVING ROOM OF AN OHIO RETAIL LUMBER DEALER'S HOME.

THE BEAUTY OF THE FURNISHINGS IN THIS LOUNGE IS ACCENTUATED BY THE MASONITE WALL TREATMENT.

FINISHING

Apply battens and trim over Masonite boards with nails of sufficient length to pass through the boards and at least 1 in. into the framing members. If boards are to be painted, the painting should precede application of battens and trim.

Where called for, edges of boards shall be beveled or rounded, and the surface shall be V grooved or carved before the boards are applied.

All joints shall be centered over framing members. Where the combination cementing and nailing is desired in installing beveled tile or beveled plank over a continuous backing, either of wood or plaster, cover the entire back of the tile or plank with a waterproof alcohol base adhesive.

Exercise care to prevent adhesive from appearing on exposed surface. Apply the boards in place and nail in position with two nails at each corner and additional nails 5 in. on center for larger units. Set nail heads neatly below surface.

PAINTING AND DECORATING

Masonite boards may be left in their pleasing natural color and finish or may be painted or enameled. Before decorating, the boards should be sized with a special fibre board size.

Note: A list of approved sizing materials for painting and decorating will be furnished on request.

STAINS

Use a glue stain made by dissolving ¾ of a pound of flake or ground glue in a pint of cold water. Dilute with one gallon of boiling water and add the dry color. Mix with water and stir to a thin paste in amounts depending upon the tone desired. Apply while warm.

WATER EMULSION PAINTS AND CALCIMINES

Apply calcimine or casein emulsion paints of either paste or powdered type directly to unsized Insulation. A single coat will give good coverage although two coats are recommended.

STENCILING

Fasten stencils into position, pinned or held by hand, and brush colors in with a standard stencil brush. Colors ground in Japan, thinned with a mixture consisting of six parts of turpentine, three parts of linseed oil, and one part of Japan dryer may be used.

Note: A list of firms manufacturing special stenciling paints will be furnished on request.

WALLS, CEILING, AND FLOORING IN THIS CLUBROOM ARE MASONITE PRODUCTS PLEASINGLY COMBINED

EFFECTIVE USE OF PRESDWOOD IN TWO TONES, IN COMBINATION WITH CHROMIUM STRIPS.

APPLICATION SPECIFICATIONS

Wall Paper Plastic Paints and Canvas

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MASONITE STRUCTURAL INSULATION OR MASONITE QUARTRBOARD AS A BASE FOR PLASTIC PAINTS, CANVAS OR WALLPAPER

MATERIAL

The material shall be Masonite Structural Insulation or Masonite Quartrboard in as large sheets as applicable as manufactured by the Masonite Corporation, Chicago, Illinois.

FRAMING

Studs, joists, rafters, and plates shall be framed as in ordinary frame construction spaced accurately 12 or 16 in. O.C. Insert 2 x 4 in. headers to provide bearing for end joints as all edges must be supported. Headers shall be installed back of chair rails and all similar molded trim. Use only straight lumber of uniform thickness. Fur masonry walls similarly with 1 x 2 in. strips shimmed to a true level plane.

APPLICATION

Masonite boards shall be applied with the long dimension parallel with and directly to the supports. Boards shall be spaced approximately 1/16 in. apart at sides, top and bottom. Do not force boards into place. A 4d finish nail driven in the wood support will furnish an accurate gauge for spacing between boards.

NAILING

Beginning in the center, nail Masonite boards first to intermediate supports and then entirely around all edges, using a 4d box nail or a No. 13 gauge 5/16-in. head blued fibre board nail, spacing nails approximately 6 in. apart through the body of the board, 4 in. apart around the edges, and 3/8 in. in from the edge. The nails should be driven only slightly below the surface of the board to furnish a key for the Swedish Putty to be applied over the head.

Note: Do not use casing or finish head nails for this application.

JOINT CONSTRUCTION

Should there be a differ-

EFFECTIVE PRESDWOOD FINISH IN OFFICES OF INTERNATIONAL SILVER COMPANY, MERIDEN, CONN.

MASONITE INSULATION CEILING OF BEAUTY WITH ROUGH UNFINISHED WALLS OF RED BRICK.

ence in thickness of adjoining Masonite boards, sand the joint for a width of about 3 in. using a block of wood to apply uniform pressure.

Remove all loose fibre from around the joint, on the surface of the board, and apply a reasonably heavy coat of Swedish Putty over the joint, spreading it approximately 1½ in. to 2 in. on each side of the joint. Into this Swedish Putty firmly embed a 2 in. strip of buckram tape or wire cloth. The tape should be embedded in the Swedish Putty, using a painter's scraping tool or pointing trowel, forcing the putty through the tape. Bring the tape to intimate contact with the board, feather-edging the Swedish Putty along each side of the tape for approximately 1 in. to prevent the edges of the tape from showing through the finished surface. The surface of the tape should be made as smooth as possible, using additional putty if necessary.

After initial application, allow to stand until the joint is thoroughly dry and smooth up any uneven spots with a second application of Swedish Putty. Allow this to dry and smooth using a wood block and No. 1 sandpaper. In preparing the joint for the application of plastic paint, plastic paint may also be used in the joint construction in place of the Swedish Putty.

At the time the joint construction is prepared, the nail heads should also be covered with Swedish Putty or plastic paint to produce a smooth surface. When dry, touch up with a second application of Swedish Putty if necessary and, when dry, sand to a smooth, even surface with No. 1 sandpaper.

After the joint construction and nail heads are properly treated, the entire wall should be given a coat of paper hanger's size or an oil base fibre board size and allowed to dry thoroughly before papering or applying canvas. This is not necessary where plastic paint is used.

Formula and directions for mixing Swedish Putty:

2 pounds Casein Glue (Casco Waterproof Glue)
½ Gallon Water (cold)
5 pounds Bolted Whiting
½ pint Lead and Oil ready mixed outside paint-light color
½ pint Spar Varnish

Mix only sufficient quantity for one day's work.

Do not mix in brass, copper or aluminum vessel. Use iron, galvanized iron, tin, enamelware, glass, china, clay, or wood receptacles. Use only clean receptacles and clean cold water. **Never use hot water.** Stir the Casein Glue slowly into the cold water, stirring for approximately 10 minutes. Allow this mixture to stand for thirty minutes. Mix again for three minutes, then stir in slowly the bolted whiting. Then add the paint and varnish.

CORNER CONSTRUCTION

A strip of wire screen cloth or metal cloth, bent to a right angle shall be applied at all angles or corners, bonded in place with Swedish Putty or plastic paint in a similar manner to that specified for the joint construction.

MASONITE MEANS OFFICE WALLS OF UNUSUAL INTEREST AT COMPARATIVELY LOW COST.

MARSH WALL TILE COMPANY PLANNED, FINISHED AND INSTALLED THIS PRESD-WOOD WALL TREATMENT.

APPLICATION SPECIFICATIONS

Roof Insulation

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MASONITE ROOF INSULATION OVER WOOD, CONCRETE, GYPSUM, AND STEEL DECKS

MATERIAL

Roof Insulation shall be Masonite Roof Insulation, size 22 x 47 in., in multiples of ½ in. thickness as made by the Masonite Corporation, Chicago, Illinois.

APPLICATION

Keep Insulation and roof dry before, during, and after application. Before laying Insulation, clean roof deck surface. Properly nail springy boards and cover wide cracks and knot holes.

In cases involving high humidities and condensation, treat deck with a two-ply vapor Seal Course, consisting of two layers of 14-lb. saturated felt, half-lapped and mopped back at least 12 in. Extend and turn up Seal Courses to form a water cut-off along all roof edges and vertical surfaces. Then apply Insulation, wrapping Vapor Cut-off extension around edges and mopping down 4 in. to 6 in. on top of Insulation.

Apply only as much Insulation in one day as can be covered by the finished roofing. At the end of each day's work, turn down roofing felt over exposed edge of Insulation and mop securely so seal need not be broken upon resumption of work. Bring adjoining edges of Insulation to moderate contact. At vertical surfaces, fit Insulation to insure proper joining without forcing. Apply single layer Insulation with end joints staggered. Apply multiple layer Insulation with long edges of Insulation of succeeding layers parallel to those of first layer, breaking all joints in successive layers. Where slope of roof exceeds 3 in. to the ft., anchor Insulation to the deck with nails, screws, expansion bolts, or steel darts. With hot asphalt or pitch, mop only sufficient area at a time to provide complete, firm embedment for a single Insulation unit while mastic is still hot. Where two or more layers are applied in hot asphalt or pitch, similarly mop the exposed surface of the preceding layer and securely embed the successive layer therein.

Install cant strips around all edges where decks join vertical surfaces.

TEMPERED PRESDWOOD AND BURNISHED METAL BANDS ADORN THE WALLS OF THIS DINING ROOM.

ANOTHER MARSH WALL TILE COMPANY INSTALLATION COMBINING RICHNESS AND BEAUTY WITH DURABILITY.

WOOD DECK DRIP COURSE

If Insulation is to be applied in a single layer, provide a drip course of rosin sized paper or saturated felt.

WOOD DECK VAPOR SEAL COURSE

Over wood deck apply a layer of coated building paper, lapped 2 in. at joints and nail it sufficiently to hold in position. Then lay two plies half-lapped saturated felt with 6 in. turned up extensions along vertical surfaces and over the cant strips. Nail back edge of each sheet with tin capped galvanized barbed roofing nails spaced 3 in. apart. Mop back all laps 12 in. Mop deck liberally with hot asphalt or pitch, using not less than 30 lbs. per 100 sq. ft., and embed Insulation securely therein.

CONCRETE OR POURED GYPSUM ROOFS

Prepare monolithic poured gypsum or concrete decks with a liberal coating of waterproof primer, using not less than one gallon of primer for each 100 sq. ft. of roof surface. Mop the deck liberally with hot pitch or asphalt, using not less than 30 lbs. per 100 sq. ft. of surface, and embed Insulation securely therein.

UNIT TILE ROOFS

Properly point up the joints of all tiles where asphalt is used, mop the entire deck, and embed Insulation therein. Where coal tar pitch is used, spot mop tile units keeping all moppings back 4 in. from the tile joints and securely embed Insulation therein.

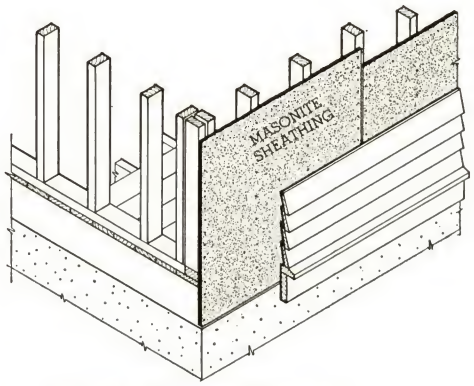
STEEL ROOF DECKS and VAPOR SEAL COURSE

Inspection shall be made to see that the steel deck is free from grease, oil, and dirt and all sharp angles are rounded so as to avoid rough, sharp edges. Lay a strip of roofing felt 6 in. wide uncemented over expansion joints at ridge. Mop roof with hot asphalt (do not use pitch on steel decks), embedding two plies half-lapped 14 lb. asphalt saturated felt with 6 in. turned up over cant strip extending along vertical surfaces. Mop deck liberally with hot asphalt, using not less than 30 lbs. per 100 sq. ft., and embed Insulation securely therein. Over wood or steel rafters, under slate tile or asbestos shingles, apply Masonite Structural Insulation in sizes 4 x 5, 6, 7, 8, 9, 10, or 12 ft., attaching the Insulation to the rafters sufficiently to hold the boards in place until the wood sheathing is applied over the Insulation. Over the wood sheathing a waterproof membrane roof should be applied before laying the shingles.

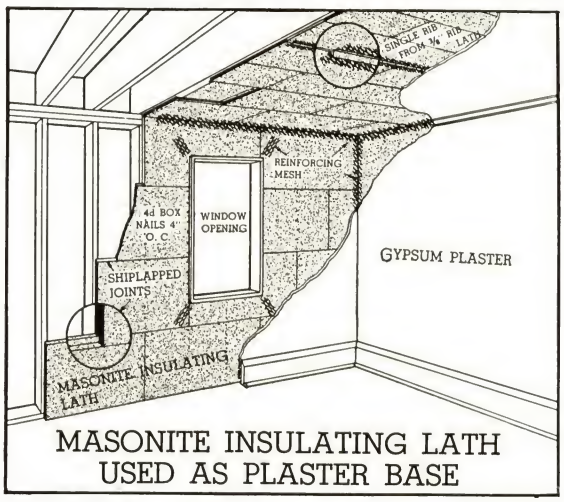
WALLS OF PAINTED PRESDWOOD HELP SELL COUNTLESS GALLONS OF PAINT IN THIS ATTRACTIVE STORE.

PRESDWOOD IS A MATERIAL THAT FITS PERFECTLY INTO THE MODERN SCHEME OF INTERIOR DECORATION.

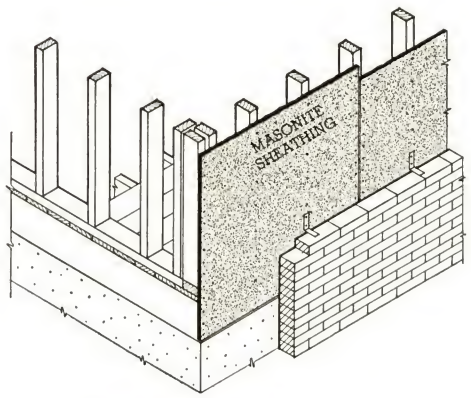
MASONITE CONSTRUCTION DETAILS



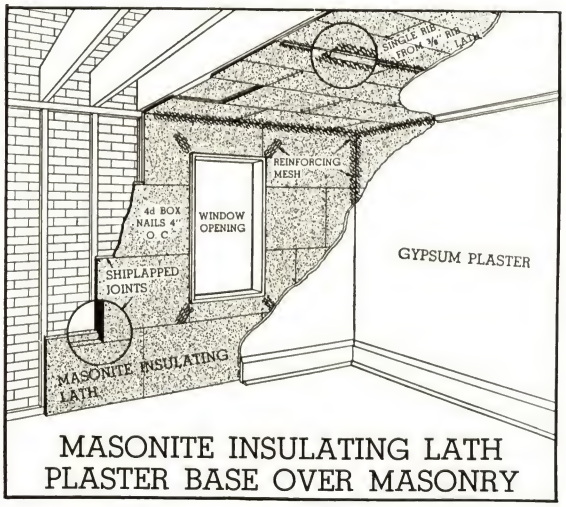
FRAME CONSTRUCTION



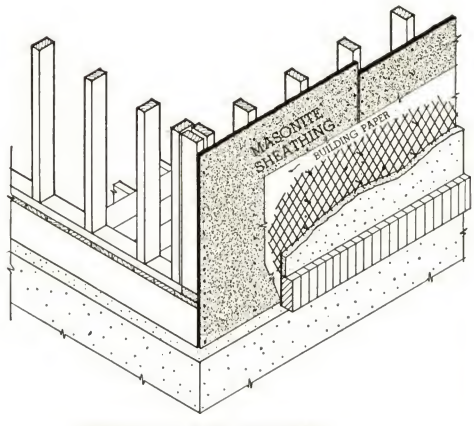
MASONITE INSULATING LATH
USED AS PLASTER BASE



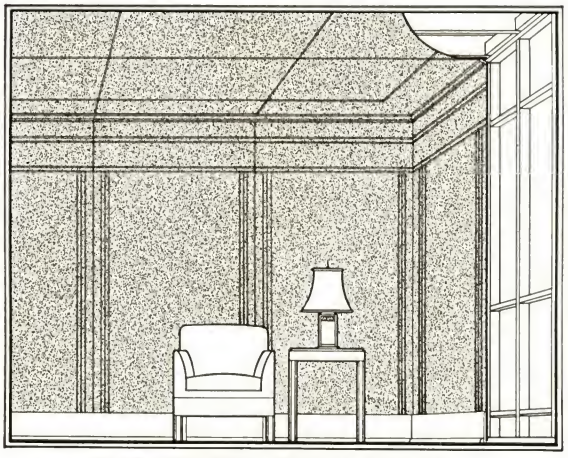
BRICK VENEER



MASONITE INSULATING LATH
PLASTER BASE OVER MASONRY

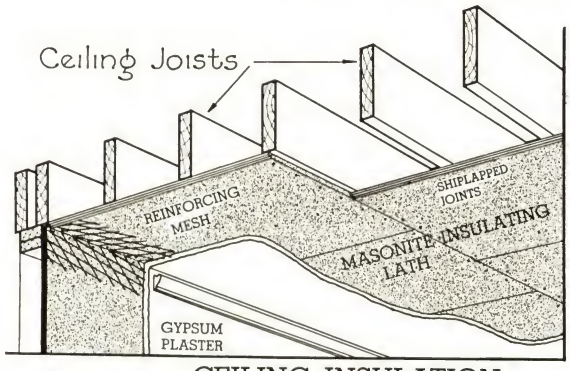


STUCCO ON FRAME

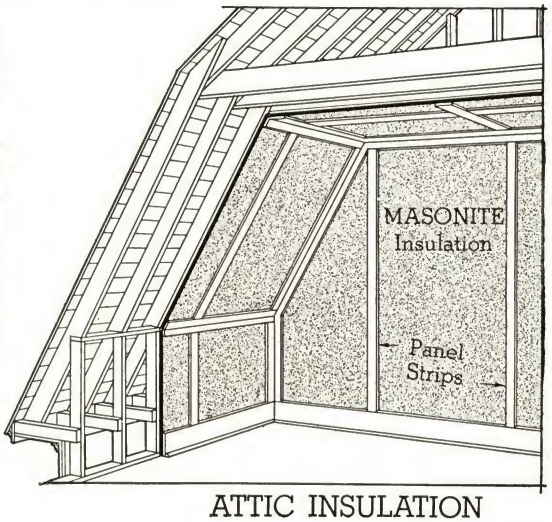


MASONITE INSULATION
USED AS INTERIOR FINISH

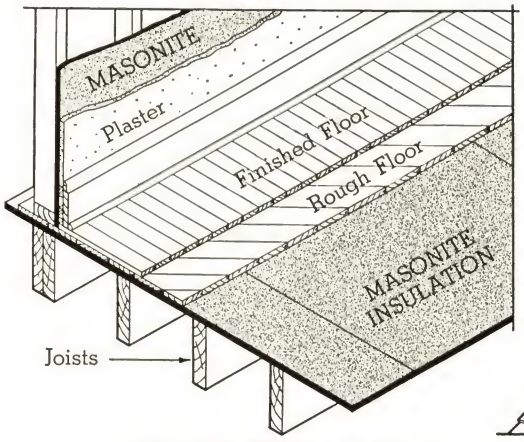
MASONITE CONSTRUCTION DETAILS



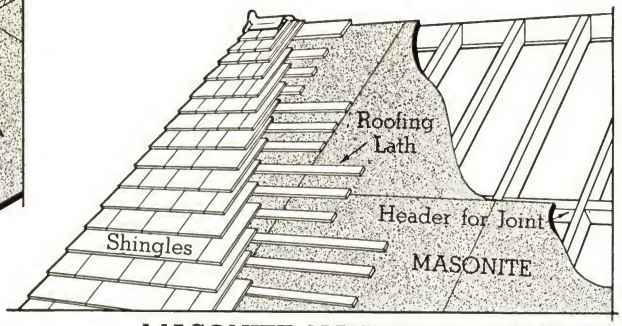
CEILING INSULATION



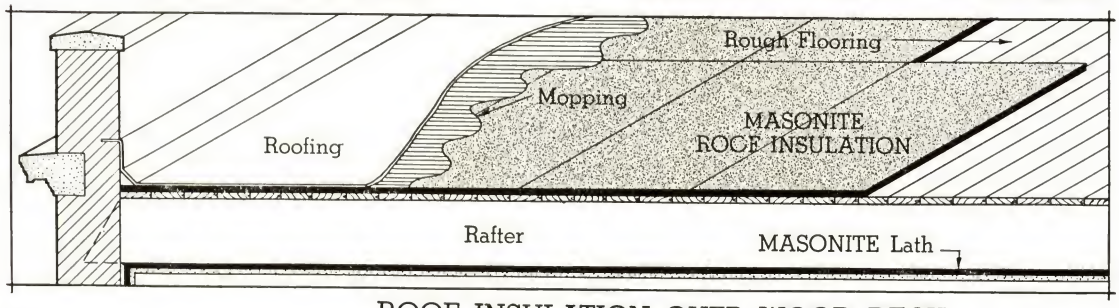
ATTIC INSULATION



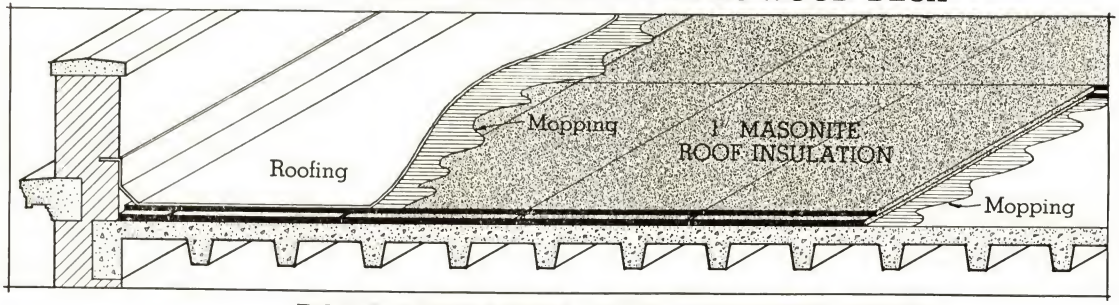
FLOOR INSULATION



MASONITE NAILED TO RAFTERS

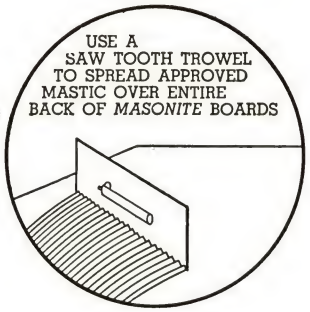


ROOF INSULATION OVER WOOD DECK

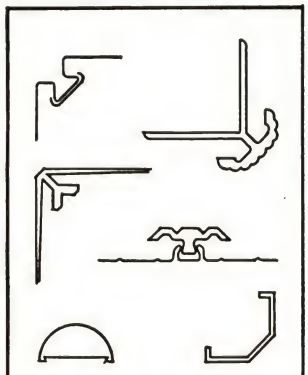


ROOF INSULATION OVER CONCRETE DECK

MASONITE CONSTRUCTION DETAILS

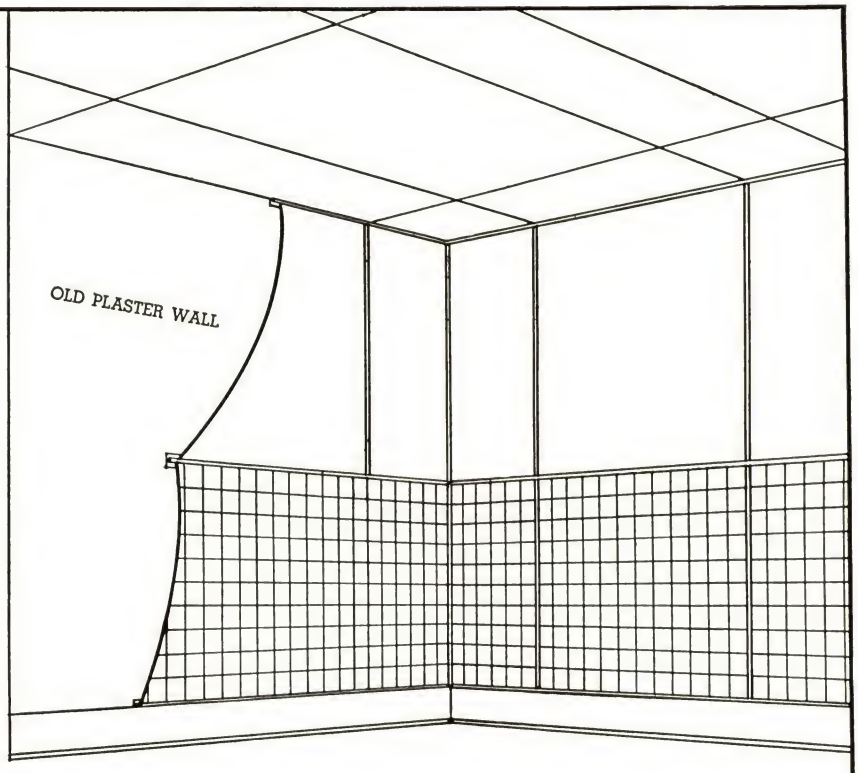


METAL MOULDINGS



BENDIX MANUFACTURING CO.
192 LEXINGTON AVE., NEW YORK. N. Y.
CHAS. F. BIELE & SONS CO.
33 BETHUNE ST., NEW YORK. N. Y.
BOHN ALUMINUM & BRASS CORP.
DETROIT, MICHIGAN
CHICAGO METAL COVERING CO.
2833 W. LAKE ST., CHICAGO, ILL.
CHICAGO METALLIC SASH CO.
2112 OGDEN AVE., CHICAGO, ILL.
COLONIAL SALES CORP.
480 LEXINGTON AVE., NEW YORK. N. Y.
HERRON-ZIMMERS MOULDING CO.
6600 EAST OUTER DRIVE, DETROIT, MICH.
KINKEAD INDUSTRIES
1609 N. LINCOLN ST., CHICAGO, ILL.
MACLANBURG-DUNCAN
OKLAHOMA CITY, OKLAHOMA
MARSH WALL PRODUCTS CO.
DOVER, OHIO
PYRAMID METALS
455 OAKLEY BLVD., CHICAGO, ILL.
SIOUX METAL PRODUCTS CO.
3000 LOWELL AVE., SIOUX CITY, IOWA
C. SPIRO MFG. CO.
DOBBS FERRY, N. Y.
STANDARD WALL COVERING CO.
1819 N. NINTH ST., PHILADELPHIA, PA.
WILSON METAL PRODUCTS CO.
337 E. TOWN ST., COLUMBUS, OHIO
WOOSTER PRODUCTS, INC.
WOOSTER, OHIO

THE ABOVE COMPANIES AS WELL AS OTHERS HAVE AVAILABLE INSIDE AND OUTSIDE CORNERS, DIVISION STRIPS AND EDGE MOULDINGS SUITABLE FOR USE WITH
MASONITE PRODUCTS—
WRITE MANUFACTURER DIRECT FOR COMPLETE DATA—



APPLICATION OVER PLASTERED WALLS

In the accompanying details the method employed to apply Masonite Insulation, Quartrboard, Presdwood, or Temprtile to walls now plastered is shown. The old plastered walls, if badly cracked, should first be patched, and the patches allowed to dry.

The adhesive—use only that tested and approved by Masonite Corporation—should be applied to the back of the boards with a saw-tooth trowel, the boards first having been cut to fit. Use shoring to hold the boards firmly until the adhesive takes a partial set.

Metal moldings of different kinds are shown together with the names and addresses of the manufacturers. The use of such moldings add a decidedly modern tone and interesting effect.

Temprtile is furnished in boards four feet wide and twelve feet long, the entire surface scored into four inch squares. It may be painted or enameled and striped on the job. If the finest job obtainable is desired, secure the pre-finished product of one of the companies that apply high quality finishes to Masonite products.

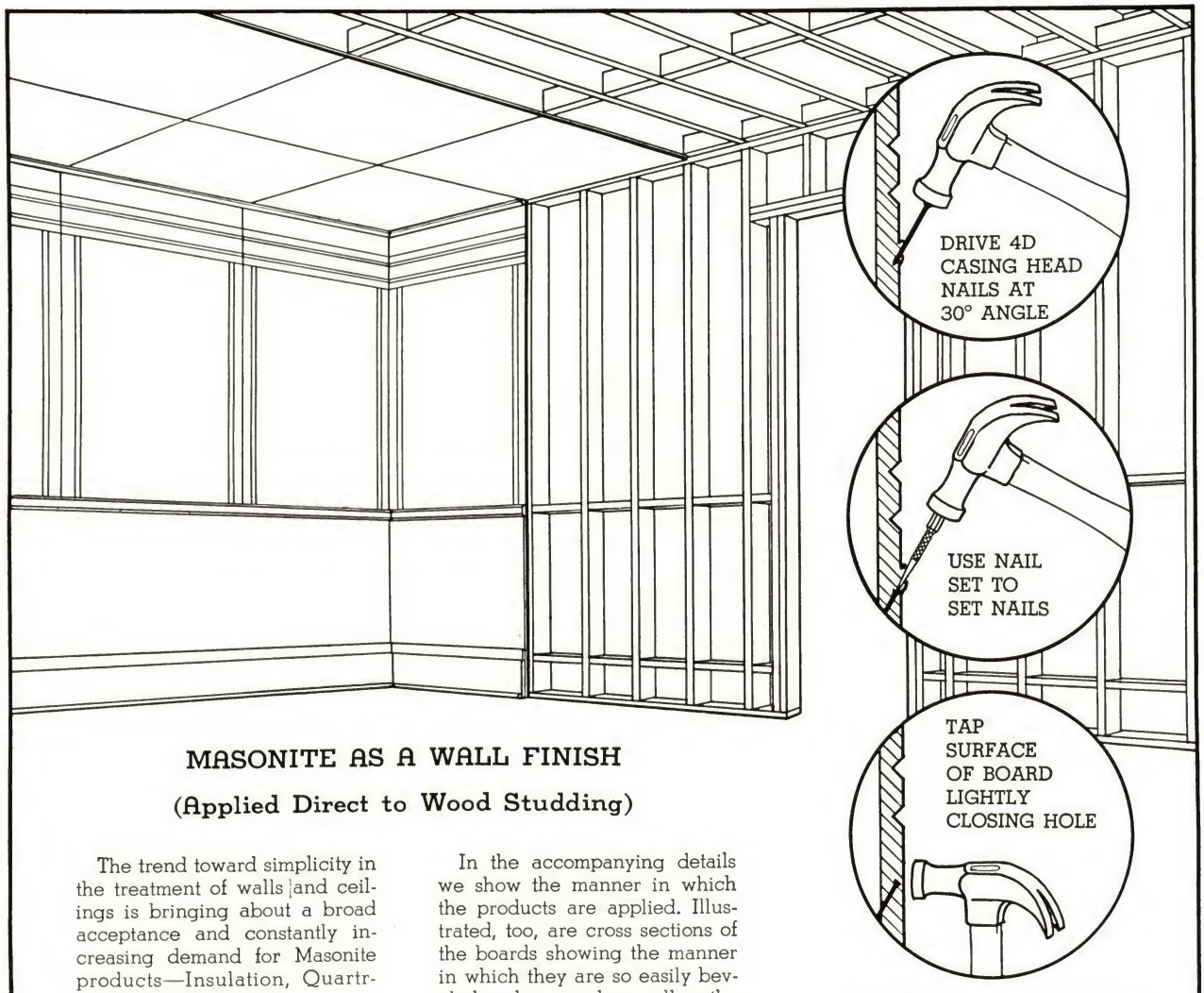
Temprtile and Tempered Presdwood should be cemented to the walls. Where it is necessary to nail the board to the walls, small brads should be used where scored lines intersect.

Where Presdwood, Tempered Presdwood or Temprtile is to be exposed to high humidities, it should have cold water brushed on the screen side and be allowed to stand for about twelve hours before being installed. This assures a permanently flat surface.

In the installation of these products, in the application of paints or enamels, and in the use of adhesives, the manufacturers' instructions should be followed carefully.

The more painstaking one is in applying and finishing these products the more attractive and satisfactory the finished job will be.

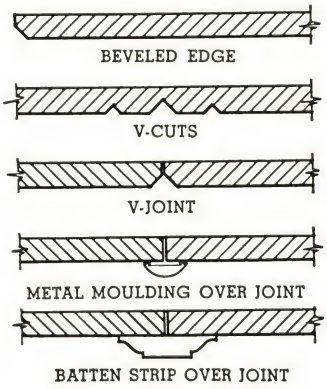
MASONITE CONSTRUCTION DETAILS



MASONITE AS A WALL FINISH

(Applied Direct to Wood Studding)

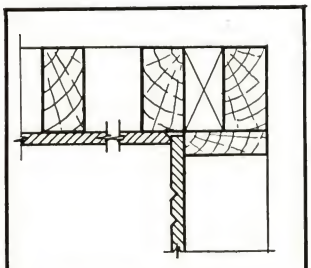
The trend toward simplicity in the treatment of walls and ceilings is bringing about a broad acceptance and constantly increasing demand for Masonite products—Insulation, Quartrboard, and Presdwood.



In the accompanying details we show the manner in which the products are applied. Illustrated, too, are cross sections of the boards showing the manner in which they are so easily beveled and grooved as well as the way in which joints may be treated with either metal moldings or neat batten strips of wood.

The three illustrations in the circles at the right of the page show the correct way to nail Masonite Insulation.

The more thought that is given the matter of design and the greater care that is taken in applying these boards the more attractive the finished job will be. Go slowly and achieve results of which you may be justifiably proud.



INSIDE CORNER DETAIL

THE CHARM OF THIS DINING ROOM IS ACCENTUATED BY WALLS OF DE LUXE QUARTRBOARD GROOVED TO GIVE THE EFFECT OF EXPENSIVE PANELING. CEILING IS MASONITE INSULATION, PAINTED

• • •

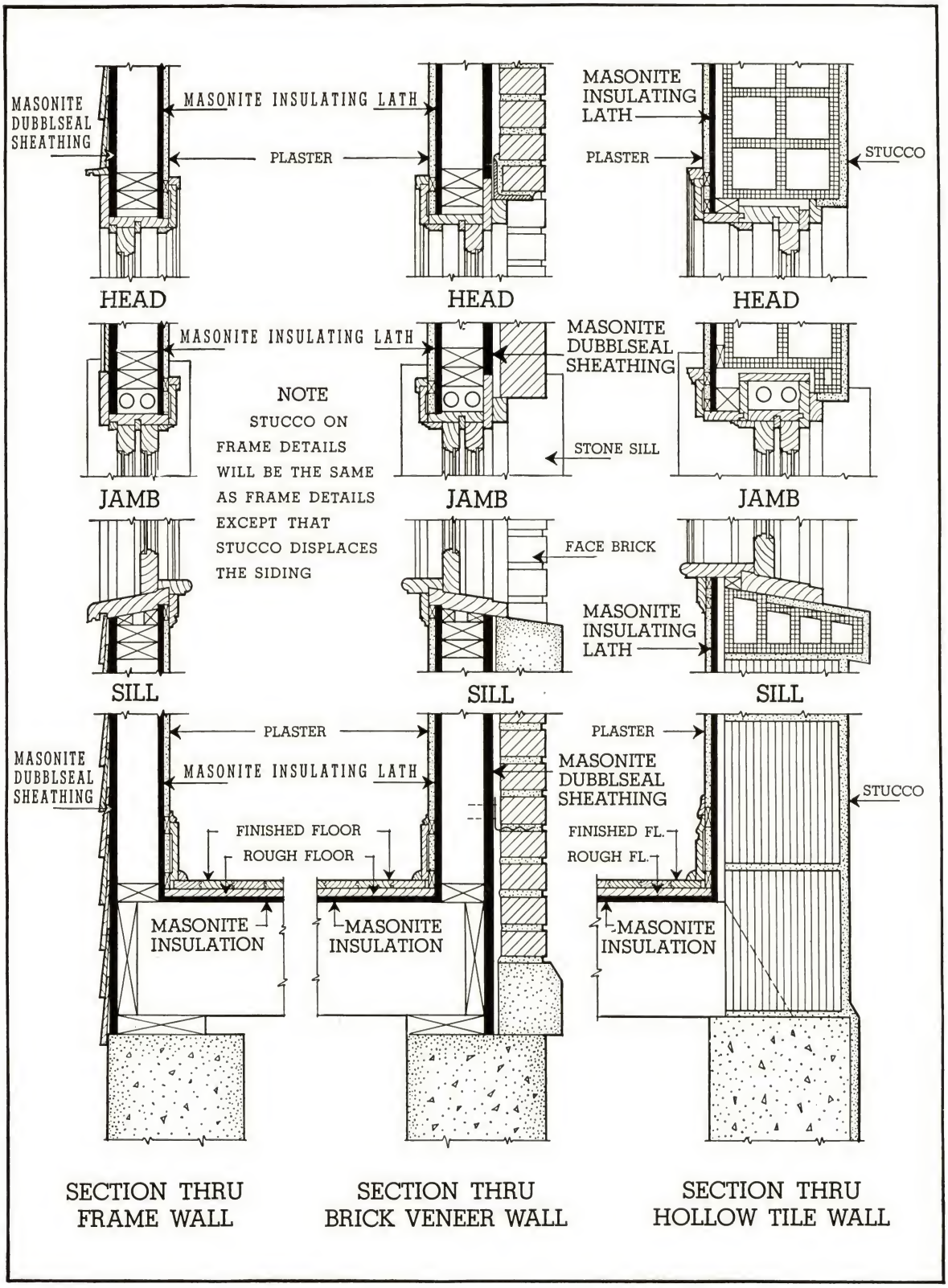
UPPER LEFT: MASONITE STRUCTURAL INSULATION AND PRESDWOOD COMBINED WITH METAL MOLDINGS PROVIDE THIS RESTFUL ATMOSPHERE

UPPER RIGHT: MASONITE TEMPRTILE AND TEMPERED PRESDWOOD PRODUCE EXPENSIVE TILE EFFECTS AT LOW COST

LOWER LEFT: THE NATURAL, RICH COLOR TONE OF MASONITE TEMPERED PRESDWOOD BLENDS HARMONIOUSLY WITH MOST STYLES OF INTERIOR DECORATION

VARIOUS CEILING AND WALL TREATMENTS OBTAINABLE WITH MASONITE STRUCTURAL INSULATION BOARD. NOTE THE EFFECTS OBTAINED BY GROOVING THE BOARD IN PATTERNS. THE WAINSCOT IS OF TEMPERED PRESDWOOD

MASONITE CONSTRUCTION DETAILS



MASONITE PRESDWOOD (Untempered)

What MASONITE PRESDWOOD IS

Masonite Presdwood is an all wood fibre board made from fibre, obtained by exploding fresh clean chips by high pressure steam. These fibres are then thoroughly felted together and pressed into board form in steam heated, flat bed hydraulic presses.

In many ways, Masonite Presdwood is an improvement on nature's original material. It is both grainless and knotless. It has great resistance to moisture, and is far denser and tougher. Its strength is uniform in all directions, having no cross grain. This refabricated wood contains no foreign substance, not even a chemical binder. It is genuine wood and nothing else. The fibres are separated by steam and put together again by heat and pressure.

SHAPE, SIZE AND THICKNESS

Presdwood is made only in board form to a standard width of 4′ and a maximum length of 12′. These boards are available in the following thicknesses: $\frac{1}{10}$″, ⅛″, $\frac{3}{16}$″, ¼″, and $\frac{5}{16}$″.

MASONITE TEMPERED PRESDWOOD

What MASONITE TEMPERED PRESDWOOD IS

Masonite Tempered Presdwood is obtained by subjecting Presdwood (Untempered) to a special tempering process, which consists of treating the board with liquids and heat, in much the same manner as steel is tempered. This tempering process increases the tensile and transverse strength, resistance to abrasion, and reduces moisture absorption. It has a tendency to further bind the fibres together, filling the voids and making a denser product. It is an even more dense and tough product than Presdwood (Untempered).

SIZE, SHAPE AND THICKNESS

Tempered Presdwood also is made only in board form to a standard width of 4′ and a maximum length of 12′. These boards are available in the same thicknesses as Presdwood (Untempered), namely, $\frac{1}{10}$″, ⅛″, $\frac{3}{16}$″, ¼″, and $\frac{5}{16}$″.

GENERAL INFORMATION and SPECIFICATIONS FOR TEMPERED PRESDWOOD and PRESDWOOD (Untempered)

Advantages of PRESDWOOD

They will not crack, split, cr splinter. They are highly resistant to wear and moisture and show little contraction or expansion. They contain no foreign substances of any kind that are injurious to tools. They are easily worked on planers, sanders, and shapers, as well as with hand tools. Tempered Presdwood being more dense and harder will produce a smoother and cleaner cut.

USES OF PRESDWOOD

To cover this subject would necessitate the use of much space, for these products are being used extensively in many diversified fields. The uses pointed out herewith are therefore those uses which are of particular interest to the architect, builder, contractor, carpenter, and home owner. For interior decoration, Presdwood (Untempered) is used for panels on walls and ceilings, either natural or as a base for any desired decorative treatment. It is used in private homes, business offices, stores, or public buildings. Properly installed, there is no danger of the broad, smooth, handsome boards curling, warping, or buckling. It is also used extensively in building cabinets and for closet lining.

TEMPERED PRESDWOOD

Tempered Presdwood is used for the front and tops of counters, as tops for desks and tables and for drawer bottoms.

It has had wide acceptance for use as a concrete form material, using it both structurally and as a liner inside of wood forms. Where concrete surfaces are to be left exposed, the use of Tempered Presdwood for form lining results in a fine, smooth surface on the concrete wall, column or slab, so that no special surfacing or grinding work is required. Possibly its greatest advantage is the number of re-uses it is possible to obtain when it is used as a concrete form material. For complete details and specifications covering this use, refer to Masonite Tempered Presdwood Catalog.

FOR SPECIAL USES

Both Tempered Presdwood and Presdwood (Untempered) are used in building radiator cabinets, clothes hampers, fire screens, radio cabinets, card tables, incubators, brooders, shipping cases, children's play houses, etc.

METHOD OF APPLYING TEMPERED PRESDWOOD and PRESDWOOD (Untempered)

Cutting and Fitting—Any woodworking tools may be used. The boards should be cut to accurate size. Under no condition should Presdwood be sprung or forced into place.

Nailing—Both sizes and type of nails to be used are determined by the particular requirements of the case. Where any nailing is required in the center of the board, this should be done first, after which the nailing of the edges should be done. Never "toe-nail" Presdwood.

Gluing—Glue Presdwood just as you would any other wood board, using a good high grade waterproof cement or glue, being careful to secure solid contact over the entire glued surface.

Finishes—Practically all of the leading manufacturers of paints, lacquers, and varnishes are familiar with the finishing of both Tempered Presdwood and Presdwood (Untempered). As Tempered Presdwood and Presdwood (Untempered) go into so many diversified fields, space does not permit finishing specifications. Where doubt arises regarding the finishing of Tempered Presdwood and Presdwood (Untempered), consult your paint dealer or write direct to the paint manufacturer concerning any special finishes or effects you may desire.

In most instances, where paint is to be used, the use of Tempered Presdwood will save one priming coat.

A list of approved primers or sealers for Tempered Presdwood and Presdwood (Untempered) is supplied on request.

Note: Where Presdwood, Tempered Presdwood or Temprtile is to be exposed to high humidity, it should have cold water brushed on the screen side and be allowed to stand for about twelve hours before being installed. This insures a permanently flat surface.

MASONITE TEMPRTILE

Temprtile is Tempered Presdwood into which scoring has been pressed. The scoring is in 4″ blocks, and the Temprtile, when carefully finished, gives a tile effect that in numerous instances is mistaken for ceramic tile. Masonite Temprtile may be installed, however, at only a small fraction of what a ceramic tile installation would cost. It is practical and decorative in kitchens, serving rooms, breakfast nooks and bath rooms. For complete details and specifications, refer to Masonite Temprtile Catalog.

10
33

Genuine

MASONITE

STRUCTURAL INSULATION

MASONITE CANEC—MASONITE ROCK WOOL

INSULATING LATH—QUARTRBOARD

PRESDWOOD—TEMPRTILE

1938

MASONITE *Corporation*

111 *W. Washington Street,* CHICAGO, ILLINOIS

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THE PLASTERGON WALL BOARD COMPANY

Manufacturers of Quality Wood Fibre Wall Boards Since 1911

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Distributors in All Principal Cities, Strategically Located, so as to Insure Delivery to Most Points within 24 Hours After Receipt of Orders

FIBRE WALL BOARDS

Plastergon (Pebbled).
Perfect-O-Cell (Pebbled).
Plastergon Tile (4x4 in. pattern).

"THE QUALITY BOARD"
"PLASTERGON"
WOOD-FIBRE
WALLBOARD

Mammoth ¼ In.
Economy.
Emerald (Green One Side).

Plastergon Wall Boards—Manufactured from long, tough wood fibres, scientifically treated, so as to minimize expansion and contraction. The tough, long fibres are subjected, in the manufacturing process, to pressure under high compression rolls, adding tremendous strength to the product.

After leaving the laminating machine, the large light weight panels are then kiln dried and surface sized, two most important operations which add to the long life and durability of the product.

Plastergon Fibre Wall Board—Products are manufactured in 32 and 48-in. widths, in standard lengths of 6 to 16 ft., with the exception of Plastergon Tile Board which is manufactured only in the 48-in. width, and are approximately $\frac{3}{16}$ in. in thickness, except Mammoth, which is ¼ in.

INSULATING BOARDS

Light Colored

EVENAIRE INSULATING BOARD

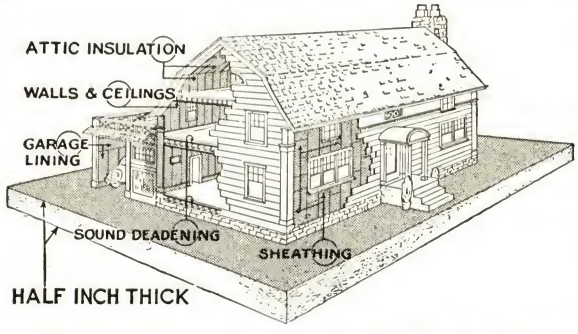
Evenaire is manufactured from new spruce wood fibres, waterproofed and finally scientifically fabricated into a rugged insulating board, light in weight, having great structural strength and furnishing high insulating efficiency.

Evenaire is cream colored, with a finished texture that has utility in addition to its attractiveness.

The thermal conductivity of Evenaire Insulating Board has been established as 0.325 B.t.u.'s per hour per square foot per degree Fahrenheit per inch thickness. The tensile strength of Evenaire is approximately 280 lbs. per sq. in., adding greatly to the structural strength of any building in which it is used.

Evenaire is available in panels ½ in. thick, 4 ft. wide and 6, 7, 8, 9, 10 and 12 ft. long.

Evenaire Lath is 18 in. wide and 4 ft. long, shiplapped on the long edges and beveled on four edges. It is an ideal plaster base, giving additional strength and insulation value to the buildings in which it is used.



Dark Colored

LOCKAIRE INSULATING BOARD
LOCKS OUT HEAT
LOCKS OUT COLD
LOCKS OUT NOISE

Lockaire is a darker colored board made from the long tough fibres of licorice roots, which develop a product of great structural strength and high thermal and acoustical resistance due to the millions of microscopic dead air cells contained in their structure. Licorice root fibres are inherently resistant to a remarkable degree to attack by vermin and bacteria, and do not disintegrate with age, thus giving you in Lockaire an improved product in these respects over other boards of this type.

Lockaire structural board is commonly furnished ½ in. in thickness and in lengths of 6, 7, 8, 9, 10 and 12 ft. Lockaire Lath, "V" jointed, is furnished 18x48 in. and is given a patented chemical treatment to prevent the absorption of moisture into the lath when plaster is applied, thus improving the finished wall.

Lockaire is also furnished $\frac{25}{32}$ in. in thickness, and in lengths of 6, 7, 8, 8½, 9, 9½, 10 and 12 ft. This may be regular Lockaire or our specially coated Lockaire for sheathing. Lockaire Lath is also furnished in this thickness.

Write THE PLASTERGON WALL BOARD COMPANY, *Buffalo, N. Y., for Samples and Descriptive Literature*

MEMORANDA

THE RED BOOK

1938 EDITION

THERMAL INSULATION

UNITED STATES GYPSUM COMPANY

THERMAL INSULATION

• • •

UNITED STATES GYPSUM COMPANY

General Commodities Division

GENERAL OFFICES

300 West Adams St., CHICAGO, ILL.

SALES OFFICES IN ALL PRINCIPAL CITIES—FOR LIST, SEE BACK COVER

• • •

WEATHERWOOD* INSULATION

Structural Board Type

PHYSICAL CHARACTERISTICS

DESCRIPTION—Weatherwood Insulating Board is a felted wood fiber product treated to make it highly moisture resistant. It is so formed that it produces a homogeneous board, free from laminations and tendencies to split through the center.

NOTE—*United States Gypsum Company has three Insulation Board manufacturing mills: St. Joseph, Missouri; Greenville, Mississippi; and Lisbon Falls, Maine. While the raw materials from which the St. Joseph Mill insulation is made are basically different from those of the Greenville and Lisbon Falls Mills, the physical characteristics of the products of all three mills are essentially the same.*

RESISTANCE TO MOISTURE—NON-ABSORPTION—Tests show that this board, after being submerged in water for a period of two (2) hours, has an average water absorption of less than 15 per cent. It absorbs less paint than any similar product.

LOW THERMAL CONDUCTIVITY—The average thermal conductivity established in tests is .33 B.t.u.'s per hour, per sq. ft., per one inch thickness, per degree F.

STRUCTURAL STRENGTH—The tensile strength is over 300 lbs. per sq. in., and the modulus of rupture, over 500 lbs.

DURABILITY—There is nothing in this board that will deteriorate prematurely and impair the original insulation value.

Since the board is homogeneous, the fibers being interwoven through the sheet, it will not split.

The weatherproofing chemical with which the fibers are treated makes the board distinctly distasteful to rodents and insects.

Weatherboard Insulation Board for structural use is also furnished, when specified, with special treatment making it proof against attack by termites and fungi growth (dry rot). This treatment does not change its physical characteristics.

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FOR PRODUCTS DESCRIBED IN OTHER SECTIONS, SEE MANUFACTURERS' INDEX

*Trade-Mark

NON-COMPRESSIBILITY—RESILIENCE—When laid over roof decks under standard roofing materials, it is sufficiently firm to prevent denting or cutting of the roofing under normal use. Weatherwood will not compress under furring strips.

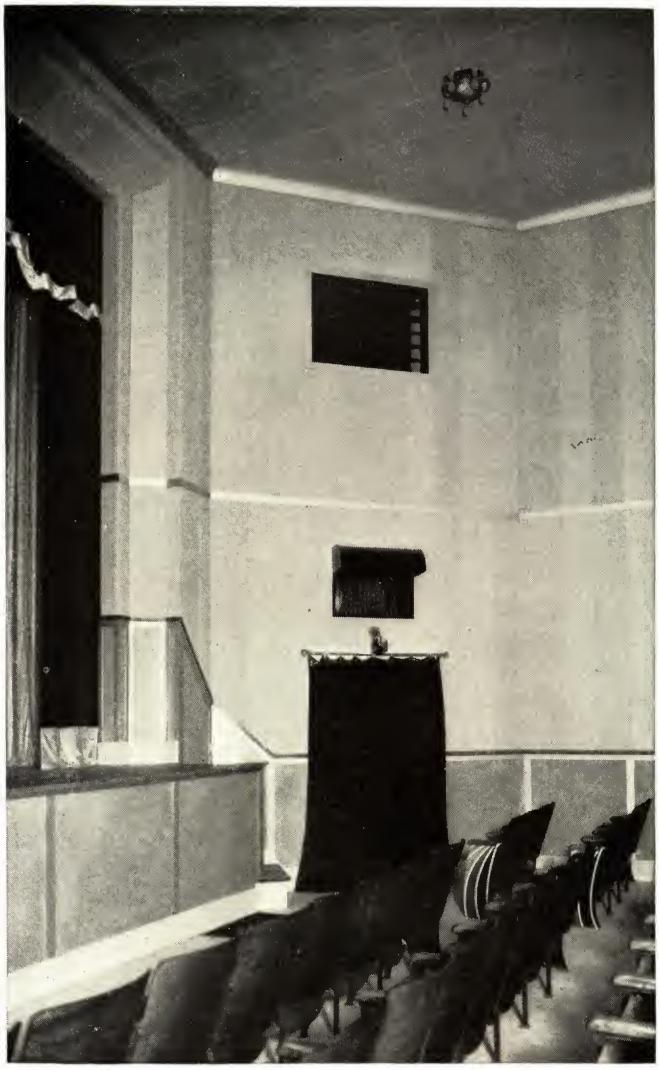
UNIFORMITY—Adequate laboratory control and mill inspection assure uniformity in density and structural strength.

APPEARANCE—TEXTURE and COLOR—The high quality of the product is reflected in its fine appearance. One surface of the standard board is finished in a uniform screen texture and the other in a "smooth skin." For decorative use, the exposed face may be obtained in either "Smooth Skin" or "Textured" surface. Low density Tile Board products, used for sound absorption, are furnished only in "Brushed" surface. The standard color is an attractive "Ivory". All decorative products are furnished in "Ivory", "Graytan", and the new "Blendtex" color range.

Weatherwood Blendtex strikes a new note in interior finish. It is a unit material with integral color in soft pastel shades of grays and tans and has a fascinating textured surface. It comes in plank and tile of various sizes and shapes to give full reign to expressions of individual taste in design. It is used to equally fine advantage in homes and clubs, in schools and churches, in theatres and restaurants, in stores and offices, and is equally effective in both new and old construction.

Under the descriptions of the products which follow will be found the particular textures and colors applying to each.

COST—Advanced methods of manufacture, quantity production, and national distribution assure a reasonable cost. Because of the light weight and large units, the board is easy to install at low labor costs. It is cut and nailed like lumber.



Typical Weatherwood Blendtex Plank and Tile Installations

WEATHERWOOD INSULATING and DECORATIVE PRODUCTS

BUILDING BOARD—Weatherwood Building Board is made in two (2) standard thicknesses—½ in. and 1 in. On special order it may be obtained 1½ in. and 2 in. thick. All thicknesses over ½ in. are waterproof-glue laminated made up of multiple layers of the standard ½ in. board. The boards are 4 ft. wide by 4, 5, 6, 7, 8, 9, 10, and 12 ft. long with square edges.

The back of the boards has a uniform "screen" texture—the face, a "smooth skin" surface. The standard color is an attractive ivory.

When specified, Weatherwood Building Board for use other than interior decorative purposes may be obtained termite and fungi proofed.

For Interior Use—Building Board specially made for interior applications is also furnished with a "textured" face and in two (2) colors—ivory and graytan.

TONGUE-AND-GROOVE INSULATING SHEATHING—A superior sheathing board with unique characteristics. It is $\frac{25}{32}$ in. thick, 24 in. wide by 8 ft. long with the long edges tongue-and-groove matched. Color and surfaces are the same as Building Board.

All T-and-G Insulating Sheathing is specially treated against termites and fungi growth.

This sheathing is applied at right angles to the studding like lumber. The tongue-and-groove joint insures a heat-sealed joint that will not bulge and assures positive continuity of insulation. When properly applied, its bracing strength is greater than standard horizontal lumber sheathing. Its thickness fits standard window and door frame requirements. The size of the unit and the fact that it is applied horrizontally facilitates ease and rapidity of erection.

ASPHALT COATED SHEATHING BOARD—Standard Weatherwood, $\frac{25}{32}$ in. thick, coated on both faces and all four edges with high melting point asphalt (one surface talc coated). It is highly waterproof. The boards are 4 ft. wide by 6, 7, 8, 8½, 9, 9½, 10 and 12 ft. long with square edges.

INSULATING LATH—Used as an insulating base for gypsum sanded or wood fiber plaster. It is made in two (2) thicknesses—½ in. and 1 in. (laminated), 18 in. wide by 48 in. long. The long edges are shiplapped and all four edges are beveled.

Metal Reinforced Insulating Lath—Similar to the standard lath but provided with a wire fabric attached to one long edge in such a manner that after the lath unit has been applied, the reinforcement can be slipped down into position over the joint without further nailing.

ROOF INSULATION—Used over wood and incombustible roof decks under built-up roofing. It is made in four (4) thicknesses—½, 1, 1½, and 2 in., water-resistant glue laminated, 22 in. wide by 47 in. long. Where specified, it can be furnished stapled with offset edges when over ½ in. thick.

INSULATING TILE BOARD—Insulating Tile Board is made in two (2) types—Standard Density, fabricated from standard Weatherwood Board, and Low Density. They may be obtained with four edges beveled and square, two edges beveled and square, and two edges beveled and tongue-and-groove, and all four edges beveled and tongue-and-groove (see details).

Standard Density—Adapted to general use for decorative wall and ceiling finishes. They are made in two (2) thicknesses—½ in. and 1 in. (laminated); two (2) size groups (see below); and three (3) textures and colors—Ivory "Smooth Skin", Ivory "Textured", and Blendtex "Textured".

Low Density—A special low density product used for sound correction where a low cost, attractive sound absorbent is required. They are made ½ in. thick, in two (2) size groups (see below), in two (2) colors—Ivory and Antique Ivory, and one (1) texture, "Brushed". The coefficient of absorption at 512 cycles is .40.

Sizes (Group 1)—Designed for nailing application to standard framing. 16 in. x 32 in., 24 in. x 48 in.

Sizes (Group 2)—Generally for application with adhesive or nailing to special furring. 12 in. x 12 in., 12 in. x 24 in., 16 in. x 16 in., 24 in. x 24 in.

INSULATING PLANK—Used for interior finish to combine insulation and decoration in one material. They are furnished in two (2) types — Individual Planks and Multiple Planks. Both types are obtainable in two (2) thicknesses—½ in. and 1 in. (laminated).

Individual Planks—Made in random widths 6, 8, 10, 12, and 16 in. by 6, 7, 8, 9, 10, and 12 ft. long. The long edges are shiplapped with either a plain bevel or bead and bevel (see details). Colors are Ivory or Blendtex, both with "textured" surface.

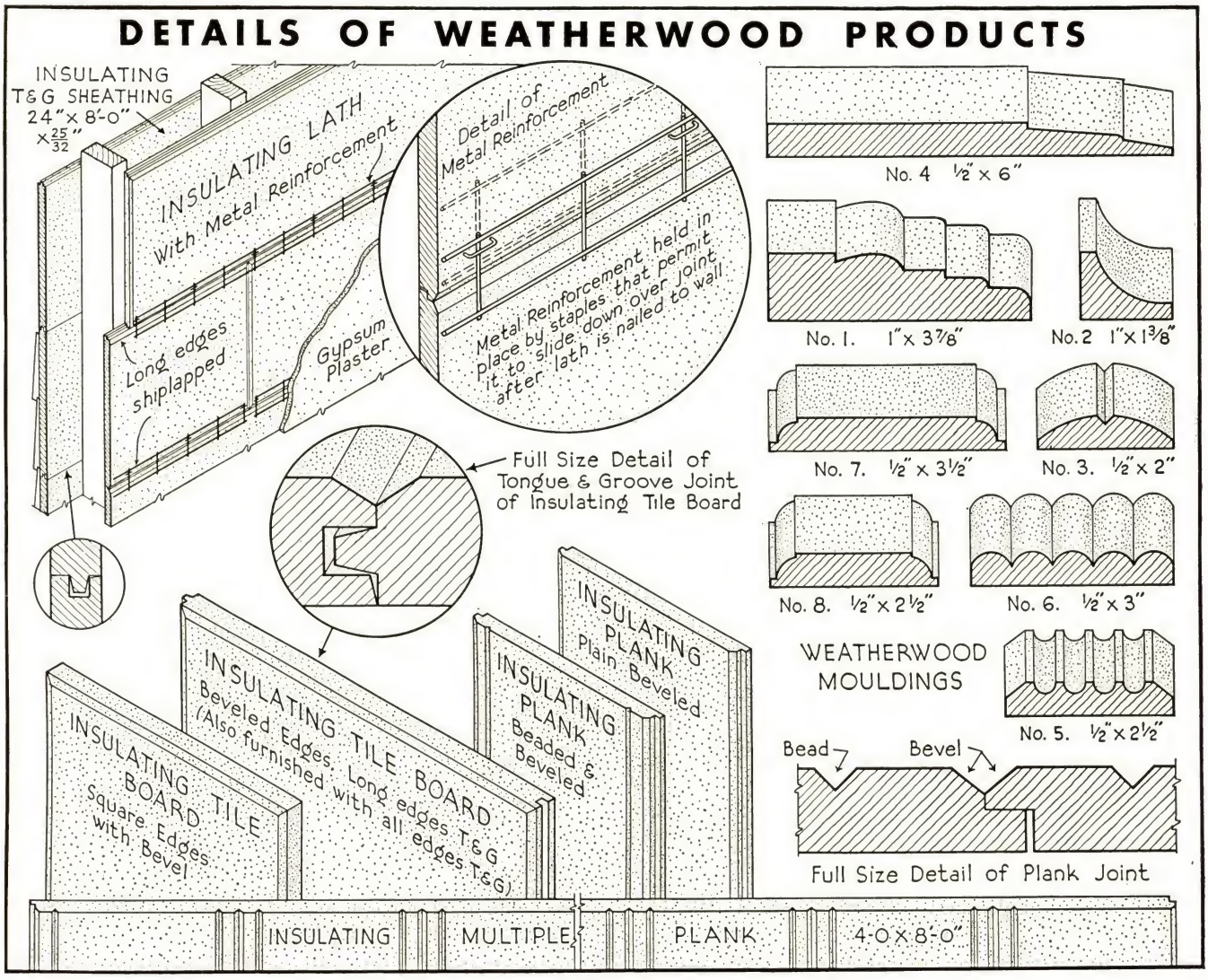
Multiple Planks—Made in units 4 ft. wide by 6, 7, 8, 9, 10, and 12 ft. long, grooved to imitate individual planks of random widths (6, 10, 8, 14, and 10 in.). Long edges of the units are shiplapped with edges and plank demarcations either a plain bevel or bead and bevel (see details). The color is Ivory in two (2) surface textures, "Smooth Skin" and "Textured".

MOULDINGS—As accessories for use in connection with Insulating Tile Board and Insulating Plank are provided eight (8) standard mouldings (see details) in 9 ft. lengths. The profiles are sanded smooth in two (2) colors—Ivory and Graytan.

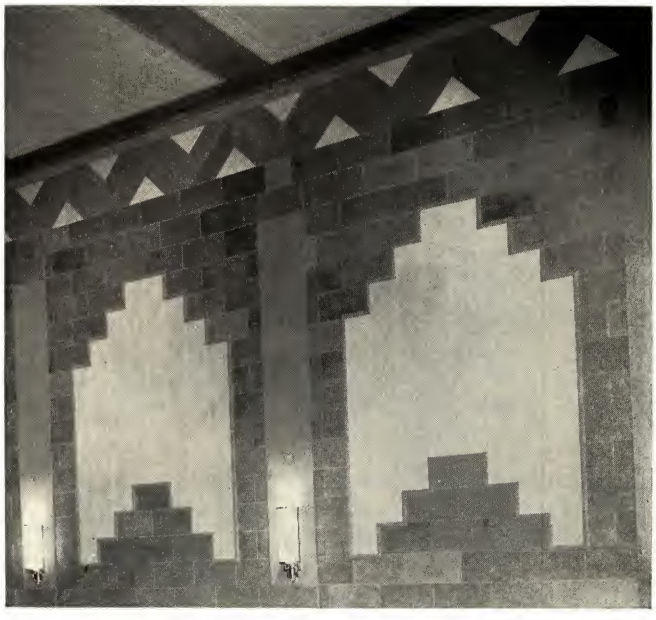
TEXTURED HARDBOARD—A durable, wear-resisting material designed to withstand abuse. Particularly adapted to use as lower wall or wainscoting in conjunction with Insulating Tile Board and Insulating Plank. Has a natural pleasing texture. The natural color is walnut brown. Will take oil stains, paint, or enamel where other color combinations are desirable.

Boards are ⅛ in. thick, 4 ft. wide by 2, 3, 4, 6, 8, 9, 10, and 12 ft. long.

DETAILS OF WEATHERWOOD PRODUCTS



Weatherwood Plank and Tile in Office



Weatherwood Tile in Theater

United States Gypsum Company

Master Specifications

WEATHERWOOD INSULATION as SHEATHING and PITCHED ROOF BOARDING

NOTE—*On walls use under wood siding, shingles, stucco, or masonry veneer. On roofs use under shingles, slate, tile or rigid roof units which are laid over wood furring strips.*

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply. Words in bracketed bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*Provide for the following in other specification divisions.*

NOTE—*Weatherwood Insulation is not a nailing base.*

(1a) CONSTRUCTION—Follow the recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association. Framing members shall be spaced accurately on 16 in. centers.

(1b) WOOD SIDING—All joints shall butt over the center of a stud. Nail into studs with nails sufficiently long to pass through the siding and Insulation Board and penetrate the stud at least 1 in.

(1c) FURRING STRIPS—Provide 1 x 2-in. furring strips properly spaced over Weatherwood Insulation to take shingles, slate, tile and similar wall and roof covering. Nails shall be sufficiently long to pass through the furring and the board and penetrate the framing member at least 1 in.

(1d) PARTIAL WOOD SHEATHING—On pitched roofs provide a solid wood base over Weatherwood under all metal work, such as gutter aprons, valleys, hips, ridges, saddles, etc., to which to attach the metal in accordance with standard practice.

NOTE—*Weatherwood roof boarding is not advocated under metal roofing or flexible roofing units, such as asphalt shingles unless entirely covered with standard lumber roof boarding.*

(1e) WATERPROOF BUILDING PAPER—

(1e1) Under Slate or Tile—Over the Weatherwood under the furring strips, apply a continuous course of **[specify brand and weight]** asphalt coated waterproof building paper.

(1e2) Under Stucco—Cover the Weatherwood Sheathing with a continuous course of **[specify brand and weight]** asphalt coated waterproof building paper.

(1f) STUCCO BASE—Stucco must be reinforced with self-furring expanded metal exterior stucco lath secured to studs with nails sufficiently long to pass through the board and penetrate the stud at least 1 in.

(1g) MASONRY VENEER TIES—Provide masonry ties at each stud spaced 16 in. apart vertically. Nails shall be sufficiently long to pass through the board and penetrate the stud at least 1 in.

(1h) FRAME FURRING, ETC.—Provide in accordance with the details window and door frame furring strips to compensate for the thickness of Weatherwood Insulation.

NOTE—*We advocate wide outside blind stops in frame construction. If, however, these are omitted, provide that the inside of the outside casings be lined with beveled strips of Weatherwood Insulation.*

(2) WORK INCLUDED

NOTE—*Here list and locate definitely the wall and roof areas to be covered. If ½-in., 25/32-in. and 1-in. thicknesses are to be used, or both Building Board and T-and-G. Sheathing, list separately and the respective locations or areas covered.*

(3) MATERIAL

(3a) GENERAL—[Sheathing] [and] [roof boarding] shall be Weatherwood Insulation Board as made by the United States Gypsum Company, 300 West Adams Street, Chicago.

(3b) TONGUE-and-GROOVE SHEATHING—Boards shall be tongue-and-groove, termite proof sheathing 25/32 in. thick, 24 in. wide x 8 ft. long.

(3c) BUILDING BOARD—Boards shall be **[Termite Proofed],** full **[½ in.] [and] [1 in.] [and] [Asphalt Coated 25/32 in.]** thick **[as above designated],** 4 ft. wide by 4, 5, 6, 7, 8, 9, 10 or 12 ft. long as best adapted.

(4) APPLICATION

(4a) GENERAL—Continuity of insulation is imperative.

(4a1) Tongue-and-Groove Sheathing—Apply boards at right angles to framing members. Fit the tongue-and-groove joints snugly together. Leave a ⅛ in. space at end joints. Stagger end joints in successive courses.

(4a2) Building Board—Apply boards with the length parallel with the framing members. Where possible, boards shall be of sufficient length to completely span between sills and plates or other structural members.

Where end joints are necessary, these shall only be made centered over 2 x 4 in. headers cut in between framing members. Side joints shall center over framing members.

Space ⅛ in. apart at all edges. Do not force boards into place. Bring the boards in close contact with window and door frames and trim.

(4b) NAILS—Galvanized roofing nails.

(4b1) Use 1½ in. nails for ½ in. thickness.

(4b2) Use 2 in. nails for 25/32 in. and 1 in. thickness.

(4c) NAILING—

(4c1) Tongue-and-Groove Sheathing—Space nails 4½ in. apart, 6 nails to each support. Nails at ends shall be ½ in. from edges. Nail to intermediate studs first.

(4c2) Building Board—At all edges space nails 3 in. apart on centers and ½ in. from the edge. On intermediate framing members, space nails 6 in. apart on centers. First nail the boards to intermediate studs and then nail the edges.

Master Specifications

WEATHERWOOD INSULATING LATH

NOTE—*Use as an insulating plaster base.*

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*Provide for the following in other specification divisions.*

(1a) CONSTRUCTION—Follow the recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association. Framing members shall be spaced accurately on 16 in. centers.

(1b) FURRING—Fur all exterior masonry walls to receive Weatherwood Lath with **[1 x 2-in.] [specify]** furring strips, accurately shimmed to a true, level plane, set 16 in. on centers, substantially secured to the masonry.

(1c) GROUNDS—Furnish and erect, substantially secured to framing members through the Weatherwood Lath, full ½-in. grounds.

NOTE—*Full ½-in. thickness of plaster should be used over Weatherwood Lath. Where stock window and door frames are used, they provide for ¾-in. thickness for lath and plaster; therefore fur out these frames as required. If special frames are detailed, provide for full ½-in. thickness of plaster over the lath.*

(1d) PLASTERING—

(1d1) Caution—Do not wet Weatherwood Lath before applying plaster.

(1d2) Cornerite—Apply metal lath "cornerite" strips over Weatherwood Lath at all re-entrant angles and all corners not protected with corner beads.

(1d3) Plaster—Use gypsum cement or gypsum wood fiber plasters.

(1d4) Thickness—Full ½ in. thick, flush with grounds.

(1d5) Application—Apply in three (3) coats in accordance with the plaster manufacturer's specifications. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary and particularly on ceilings, provide plaster screeds to insure an even and uniform ½-in. plaster thickness.

NOTE—*The maintaining of a uniform and sufficient plaster thickness over a fibrous or board plaster base such as Weatherwood Lath, and especially on ceilings, cannot be too strongly stressed if permanent, satisfactory results are to be expected. Too frequently a weak, thin plaster coat, inadequate to withstand the usual strains of building settlement, shrinkage and vibration, results in plaster cracks which react against even the best of plaster bases.*

(1d6) Ventilation—Provide adequate ventilation for the proper drying of the plaster work.

NOTE—*To protect the wall from dampness, all moisture emanating from the plastering operation must be carried off by air coming in contact with the exposed surface. Particular attention should be given to providing adequate ventilation for the proper drying of plaster work, and sufficient heat to prevent damage by frost.*

(2) WORK INCLUDED

NOTE—*Here list and locate definitely the wall and ceiling areas to be covered. If ½ in., and 1 inch thicknesses are used, list separately and the respective locations or areas covered.*

(3) MATERIAL

Lath shall be Weatherwood, Shiplapped and Beveled, **[Metal Reinforced]** Insulating Lath as made by the United States Gypsum Company, 300 West Adams Street, Chicago. Units shall be full **[½ in.] [and] [1 in.]** thick **[as designated above],** 18 in. wide by 48 in. long.

(4) APPLICATION

(4a) GENERAL—Do not moisten lath before application. Apply lath with bevel surface exposed and with the length at right angles to the framing **[or furring]** members. End joints shall center over framing members. Stagger end joints in successive courses on all walls and ceilings; likewise stagger end joints at juncture of walls and ceilings.

(4b) SPACING—Horizontal joints shall be brought tight in moderate contact. Units shall be spaced ¼ in. apart at ends.

(4c) NAILS—

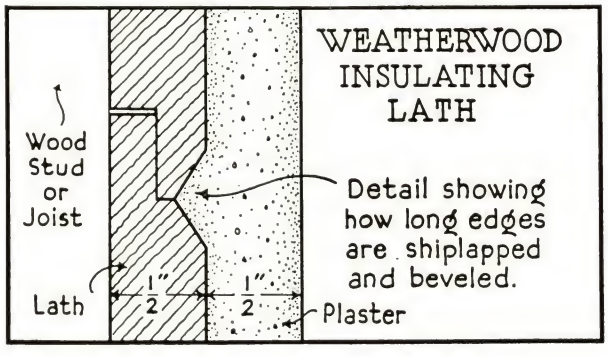
(4c1) Use 1⅛ in., $\frac{5}{16}$ in. head, blued nails for ½ in. thickness.

(4c2) Use 1¾ in., $\frac{5}{16}$ in. head, blued nails for 1 in. thickness.

NOTE—*Large headed nails are unnecessary.*

(4d) NAILING—Space nails 5½ in. apart on centers set ½ in. from the edges. First nail to intermediate framing **[or furring]** members and then at ends. Secure long edges at angles of walls and ceilings, spacing nails 5½ in. o.c. and not more than ½ in. from the edge.

(4e) METAL REINFORCEMENT—Apply units with reinforcement at bottom of the unit. Slide metal reinforcement down over joint after lath has been applied. Do not nail reinforcement.



United States USG Gypsum Company

Master Specifications

WEATHERWOOD INSULATION as INTERIOR FINISH

NOTE—*Use as insulating interior wall and ceiling finish. For this purpose it is furnished in a variety of types as well as a variety of surface textures and colors. Where desirable, it may be stained or painted. Unfinished or finished with stains, it has a decided value for sound absorption.*

NOTE—*Weatherwood when used for interior wall finish may be advantageously decorated by grooving, beading, etc., which may be accomplished on the job by any good mechanic with a Bevel-Devil or similar cutting or grooving tool.*

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*Provide for the following in other specification divisions.*

NOTE—*Weatherwood Insulation is not a nailing base.*

(1a) CONSTRUCTION—Follow the recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association. Framing members shall be spaced accurately on 16 in. centers.

(1b) FURRING—Where nailing application of Weatherwood interior finish units is required over furring, furring strips shall be **[1 x 2 in.] [specify]** sound, straight lumber, accurately shimmed to a true, level plane.

(1b1) For Building Board, Multiple Planks, Large Tile Board, or Textured Hardboard—Furring strips shall be applied vertically, 16 in. on centers.

(1b2) For Individual Planks—Where Individual Planks are applied **[vertically on walls] [on ceilings]**, furring strips shall be applied at right angles **[to the framing members] [to the long dimension of the planks]** spaced not to exceed 10 in. on centers. Additional framing members or furring strips shall be installed to provide proper nailing base for wood trim applied over the Weatherwood units.

(1b3) For Tile Board—Special furring strips for small nailed units shall be accurately spaced centering on the unit width to conform to pattern **[selected] [shown on detail drawings].**

(1c) SOLID BACKING—Where adhesive application of Weatherwood interior finish units is required, a clean, firm, uniformly level surface shall be provided. This may be plaster, Weatherwood Building Board, or USG Rocklath.

(1d) FINISH—

NOTE—*The Ivory Weatherwood Interior Finish Units may be left natural or finished with stain or paint.*

(1d1) Cleaning—Remove dirt or stains with art gum or dry wallpaper cleaner. Fill nail holes and abrasions with Red Top Nail-Hyde.

(1d2) Stain—Weatherwood Insulation takes water, alcohol or other types of stain admirably, either in single tones, panels or stencil design.

NOTE—*Where used as acoustical correction, use acid or oil stain only. Paint fills the pores and materially reduces the acoustical efficiency.*

(1d3) Paint—Size with water, glue or oil size before applying oil paint. Water paints, such as Texolite (a USG product), require no sizing.

(2) WORK INCLUDED

NOTE—*Here list and locate definitely the wall and ceiling areas to be covered. If more than one thickness, color or surface texture is required, list separately and the respective locations or areas covered. If detail drawings are furnished, reference to them here is a convenience.*

(3) MATERIAL

(3a) Wall **[and ceiling]** finish shall be Weatherwood Insulating **[Building Board] [and] [Tile Board] [and] [Plank] [and] [Textured Hardboard] [and] [Mouldings]** as made by the United States Gypsum Company, 300 West Adams Street, Chicago. Colors and textures shall be **[specify] [as designated] [on the detail drawings] [in par. 2]. [Specify special decorative grooving, etc.].**

NOTE—*On 3 page under the descriptions of Weatherwood products are given the colors, textures, and sizes of the various units.*

(3b) BUILDING BOARD—Size shall be **[½ in.] [1 in.]** thick, 4 ft. wide by 4, 5, 6, 7, 8, 9, 10, and 12 ft. long as required or units cut in panels of symmetrically disposed sizes **[to conform with the detail drawings].**

(3c) TILE BOARD—Sizes shall be **[standard density] [and] [low density] [½ in.] [1 in.]** thick Weatherwood Insulating Tile Board by **[specify sizes] [sizes indicated on detail drawings]. [Specify type of edge, whether beveled, square, or T-and-G].**

NOTE—*Specify low density where used particularly for acoustical sound absorption for adhesive application only.*

(3d) INDIVIDUAL PLANKS—Sizes shall be **[½ in.] [1 in.]** thick, in random widths 6, 8, 10, 12, and 16 in. by 6, 7, 8, 9, 10, and 12 ft. long as required. Long edges shall be shiplapped with **[plain bevel] [bead and bevel]** edge.

(3e) MULTIPLE PLANKS—Sizes shall be [½ in.] [1 in.] thick, 4 ft. wide by 6, 7, 8, 9, 10, and 12 ft. long as required with shiplapped edges. Plank demarcations shall be **[plain bevel] [bead and bevel].**

(3f) TEXTURED HARDBOARD—Sizes shall be ⅛ in. thick, 4 ft. wide by 2, 3, 4, 6, 8, 9, 10, and 12 ft. long as required.

(3g) MOULDINGS—Mouldings shall be **[specify numbers] [as designated] [on the detail drawings] [in par. 2].**

(3h) NAILS—No. 17 gauge galvanized wire nails, **[1¼ in. long for ½ in.] [and] [1¾ in. long for 1 in.]** thick units.

(3i) ADHESIVE—Adhesive shall be Stikum, Clinco, Topco, or other approved adhesive.

(4) APPLICATION—

(4a) GENERAL—Material shall be removed from the packages twenty-four (24) hours before erection and separated in a manner to permit its adjustment to atmospheric conditions of the rooms in which it is to be installed.

(4b) ADHESIVE—Adhesive shall in all cases be applied only to the back of the Weatherwood unit. First work a small quantity of adhesive into the Weatherwood with a putty knife as a primer, then apply additional adhesive to this primed area to a thickness of ⅜ to ½ in. On very uneven surfaces increase the thickness

to compensate for the low areas to bring surfaces level. If, when the unit is in position, it is noticeably below the level of those adjoining, it shall be removed and more adhesive added to assure a firm bedding. Do not attempt to level by pulling tile away from surface.

Surface to which units are applied shall be dry, clean, firm, and free of grease or any substance which will prevent a proper bond with the adhesive.

(4c) BUILDING BOARD, MULTIPLE PLANKS, TEXTURED HARDBOARD—Units shall be nailed directly to **[framing members] [and] [or] [furring strips].** Edges shall center over the structural nailing member. Provide headers or other firm nailing base at ends of units. Edges of boards shall be brought to moderate contact—do not force boards into place.

(4c1) On Walls—Units shall be applied with the length **[parallel with] [and] [or] [at right angles to] [framing members] [and] [furring strips] [as designated on detail drawings].**

NOTE—*On square edge Building Board or Textured Hardboard, it is suggested that some form of joint treatment be used, such as metal, Weatherwood, or wood mouldings. This is unnecessary with shiplapped beveled edge Multiple Plank. Specify here the type of joint treatment.*

(4c2) Nailing—Nails shall be spaced 6 in. O.C. along edges of the units and 12 in. O.C. **[6 in. O.C. on ceilings and slopes]** on intermediate framing members. Beginning at center, nail boards first to intermediate members, then at edges and ends. Set nails flush with surface of board.

(4d) INDIVIDUAL PLANKS—Edges of plank shall be brought together in moderate contact but not forced into place, the length at right angles to framing members or furring strips.

(4d1) Nailing—Both edges of the plank shall be nailed to each bearing. Drive nails at an angle of 60° reversing the angle of alternate nails. Set heads slightly below the surface. Nails may be applied either in the bevel or on the face of the board. When applied to ceilings, an additional nail is recommended in the center of 12 and 16 in. widths at each bearing.

(4d2) Cementing—Apply adhesive in strips approximately 1½ in. wide and 6 to 8 in. apart the full length of the plank and 1½ to 2 in. from the edge. Place the plank lightly against the surface about 1½ in. from the adjacent plank or point against which it will finally butt and slide into place, gradually increasing the pressure. Reasonably hard pressure should be exerted to the entire plank surface to assure proper bond, using a small piece of Weatherwood Plank to avoid marring the surface. Supplementary nailing at an angle of 60° need only be used where occasional units appear to lack substantial bond.

(4e) TILE BOARD—Tongue-and-groove edges shall be snugly fitted but not driven or forced. Butt edges shall be brought together in moderate contact.

(4e1) Nailing—Tiles having a maximum dimension of 12 in. or less shall be secured with one nail at each corner. Tiles having one or more dimensions greater than 12 in. shall be secured with nails spaced 6 to 8 in. apart on each bearing point. Nails shall be driven at an angle of 60°, reversing the angle of alternate nails. Set heads slightly below the surface. Nails may be applied either in bevel or on face of tile, preferably the latter.

NOTE—*Low density tile should never be nailed. Always apply this type to a solid backing with adhesive.*

(4e2) Cementing—Apply adhesive in spots approximately 2½ in. in diameter. For sizes 16 x 16 in. or smaller, spot adhesive only at corners. For tiles having one or more dimensions greater than 16 in., spot adhesive at corners and in addition along the sides and over the balance of the area from 8 to 10 in. apart. Spots shall be kept 1½ to 2 in. from edges. Place the tile lightly against the surface about 2 in. from the adjacent tile or point against which it will butt and silde into place, gradually increasing the pressure. Reasonably hard pressure should be exerted to the entire tile surface to assure proper bond, using a Weatherwood tile to avoid marring the surface. Supplementary nailing at an angle of 60° need only be used where occasional units appear to lack substantial bond.

(4f) WEATHERWOOD MOULDINGS—When attached to any Weatherwood product, Weatherwood Mouldings shall always be applied with adhesive. Apply in spots of suitable size, spaced 6 in. apart and staggered on the edges or in strips the entire length keeping about 1 in. from edges. Press mouldings into position to assure a continuous bond.

United States USG Gypsum Company

Master Specifications

WEATHERWOOD INSULATION as EXTERIOR FINISH

NOTE—*While generally speaking of limited architectural adaptability, Weatherwood Insulation Board as exterior finish has many applications, especially when its moisture-proof insulation value is considered.*

It is particularly adapted to the lighter, less permanent construction where cost is a prime factor, and especially for buildings of but one story, such as small dwellings, garages, summer cottages, portable temporary schools, etc. It is an ideal exterior finish for such temporary construction buildings as offices and tool and material storehouses.

(1) CONSTRUCTION PROVISIONS

Follow the recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association.

Studs and joists should be set on either 16-inch or 24-inch centers depending on height and length of spans. Framing should be braced as in standard frame construction.

(2) APPLICATION, ETC.

The specifications for Weatherwood Sheathing apply likewise to Weatherwood Exterior Finish.

(3) PAINTING

Size thoroughly with a dependable water, glue or oil size. Finish with two (2) coats of any good exterior house paint applied in accordance with the manufacturer's directions.

NOTE—*The painting of Weatherwood Insulation surfaces should be done before the application of the joint battens, trim, etc.*

(4) JOINT BATTENS, TRIM, ETC.

Cover all joints between the Weatherwood boards and all edges with wood batten strips or exterior wood trim, secured through the insulation to the framing members.

Master Specifications

WEATHERWOOD INSULATION OVER ROOF DECKS

Roof insulation applied over the various types of roof decks under Built-up Roofing is purchased and applied by the roofing contractor in one continuous operation.

The complete detailed specifications covering the application of Weatherwood Roof Deck Insulation will be found in the USG Built-up Roofing Specification Manual—See File Index.

INSULATING SHEETROCK* ROCKLATH* and GYPLAP*

Aluminum Foil Types

2 IN 1 MATERIALS—Insulating Sheetrock, Insulating Rocklath (⅜ in. thick) and Insulating Gyplap (½ in. thick) are standard products, upon the back of which is mounted a thin, smooth, bright sheet of aluminum. They are applied to the interior or exterior face of exterior walls, rafters, or top story ceilings with the bright aluminum side next the framing members. Thus installed, their heat insulating value is equal to or better than that of standard ½ in. thick Fiber Insulating Board—at the same time Insulating Sheetrock is an excellent interior wall finish, Insulating Rocklath an excellent plaster base, and Insulating Gyplap an excellent sheathing.

ADVANTAGES—In addition to their insulating value, they have all the advantages of Sheetrock (The Fireproof Wallboard), of Rocklath (The Fireproof Plaster Base) and Gyplap (Fireproof Sheathing) described in detail in The General Commodities Section. They are fireproof, permanent, do not expand or contract, and are easy to install.

The fireproof character of Sheetrock, Rocklath and Gyplap is of outstanding importance. Because of the addition of the metal surface, they provide greater fire protection. All being hydrated materials, they resist fire until their hydrated character is destroyed. With metal applied to one side of the board, the escape of moisture from the burning area is further retarded and the circulation of air, and the passage of hot gases, necessary for combustion, is reduced.

A NEW INSULATING PRINCIPLE—Heat travels in three (3) ways as follows:

(1) Conduction—Hold a poker in a hot fire and the heat travels from the fire to the hand along the poker by conduction.

(2) Convection—Stand over an open register; the hot air flows up the pipe. This heat travel is by convection.

(3) Radiation — Heat travels from a fireplace and warms the hand without warming the air between. This is radiant heat.

Heat passing through the walls or roof of a frame building (from inside out or from outside in) must pass across the air space between the studs and rafters. Approximately 75% of such heat travel is by radiation.

Insulating Sheetrock, Rocklath and Gyplap prevent radiant heat passage. Heat flow toward the metal face is reflected back as a mirror reflects light.

When the direction of the heat flow is away from the metal face, Insulating Sheetrock, Rocklath and Gyplap do not insulate by reflection—they insulate by reducing the flow of heat by radiation.

Bright surfaces that are efficient in reflecting light and radiant heat are also efficient in refusing to emit or give off heat by radiation (Kirchoff's Law of Physics).

Insulating Sheetrock, Rocklath and Gyplap reflect or refuse to emit approximately 90% of the radiant heat coming in contact with them, whereas other materials, such as wood, brick, and fiber reflect but 10% and absorb 90%.

The bright aluminum surface does not dull appreciably. The slight ultimate oxidation reduces but little its reflecting and non-radiating quality.

AUTHENTIC TESTS—Tests on actual wall constructions conducted by Professor F. B. Rowley of the University of Minnesota showed Insulating Sheetrock to be as effective as half-inch fiber board insulation in the same construction.

With an outside temperature of 125° F. and an inside temperature of 80° F. simulating summer conditions, the coefficients of heat transmission were 0.205 for the Insulating Sheetrock construction and 0.227 for the fiber board.

With temperatures outside of 0° F. and inside of 80° F. simulating winter conditions, the coefficients of heat transmission were 0.168 for the Insulating Sheetrock construction, and 0.181 for the fiber board.

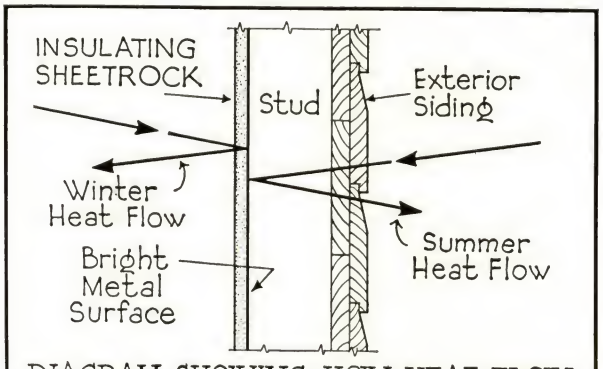


DIAGRAM SHOWING HOW HEAT FLOW IS REFLECTED BY INSULATING SHEETROCK

APPLICATION—Insulating Sheetrock, Insulating Rocklath and Insulating Gyplap are applied as specified for standard Sheetrock, Rocklath and Gyplap, with the metal side placed against the framing members. For application specifications, see "General Commodities" section.

The metal must not be placed in direct contact with another surface.

*Trade Mark

United States U.S. Gypsum Company

RED TOP* INSULATING WOOL

Fill and Blanket Type • Wall Thick • Fireproof

DESCRIPTION—Red Top Insulating Wool is an extremely light, fluffy wool insulation made from the same ingredients contained in glass—a fireproof material.

The nature of the raw material used, particularly as to purity, permits accurate manufacturing control—the product is absolutely uniform and consists of snowy white, long-fibre wool. It contains a minimum of "shot" or other non-insulating materials that add weight.

TYPES—There are five (5) distinct types of Red Top Insulating Wool, each designed to fill a specific application need.

Junior Bat Wool—Red Top Insulating Junior Bat Wool is shipped in paper bags and in a larger size in cartons. The face is identified and crossed by a double red stripe.

Bats—Red Top Insulating Wool Bats are 4 in. thick, 15 in. wide by 36 in. long and 23 in. wide by 36 in. long, shipped in cartons containing 37½ sq. ft. and 57½ sq. ft. respectively. Both the 15 in. and the 23 in. widths are packed 10 bats to the carton. A heavy waterproof paper, highly vapor resistant, is cemented to the back of each bat. This paper backing extends 2 inches on each side forming nailing flanges which are folded back during shipment and unfolded when needed to hold the wool in place. The paper should always be applied facing the plaster base. The face is crossed by a double red stripe. The stripe is the architect's and owner's assurance that the material is the high quality insulation distributed by the United States Gypsum Company. Red Top Insulating Wool Bats are also furnished in a paper backed 2 inch thickness (20 bats to the carton) carrying on the face a single red stripe on each bat.

Strip Wool—Red Top Insulating Strip Wool is a continuous 4 in. thick, 15 in. and 23 in. wide by 9 ft. long blanket, shipped in cartons containing 33¾ sq. ft. of the 15 in. and 51¾ sq. ft. of the 23 in. consisting of 3 strips, each folded into thirds for easy removal and application. A heavy waterproof paper, highly vapor resistant, is cemented to the back of each strip. This paper backing extends 2 inches on each side forming nailing flanges which are folded back during shipment and unfolded when needed to hold the wool in place. The paper should always be applied facing the plaster base. The face is identified by a continuous double red stripe. Red Top Insulating Strip Wool is also furnished in a paper backed 2 inch thickness (6 strips to the carton) carrying on the face a continuous single red stripe.

Nodulated—Red Top Nodulated Insulating Wool is designed for pouring into open spaces, such as between open attic joists or similar areas. It is shipped in paper bags, each containing 6⅔ cubic feet.

Granulated—Red Top Granulated Insulating Wool is especially developed for the "blown-in" method of installation. It is shipped in paper bags, each containing 8⅓ cubic feet.

Note Full Thickness Over Keys

Red Top Junior Bat Wool—Ideal for Existing Homes

*Trade-Mark

RESILIENCE—AN OUTSTANDING CHARACTERISTIC—Unlike other fireproof wool insulating materials, Red Top Insulating Wool is springy and resilient—it will not mat. If compressed, it recovers virtually all of its original volume when the pressure is released and is easily fluffed up to its original volume.

LOW THERMAL CONDUCTIVITY—The heat conductivity of Red Top Insulating Wool (standard density) is .266 B.t.u.'s per inch thickness, per square foot, per hour, per degree F. difference in inside and outside temperatures. (Tests by Armour Institute of Technology.)

Unusually high in insulating efficiency, it is outstanding when, as customarily used, it is wall thick (4 in.). So used its rating is .066.

LIGHT WEIGHT (DENSITY)—In its standard density, Red Top Insulating Wool weighs but 1½ pounds per cubic foot—the lightest of this class of materials.

CLEAN • VERMINPROOF • PERMANENT—Red Top Insulating Wool is clean and odorless. There is nothing in its composition which will attract or furnish sustenance to rodents or other vermin. Once placed, it will not disintegrate, mat or settle. The fibers are tough, thoroughly interlaced, and resilient, and remain permanently efficient.

EASY TO INSTALL • LOW COST—All types of Red Top Insulating Wool are economical, easy to install, and permanent. They are furnished in dimensions to fit snugly into standard framing. Red Top Strip and Bat Wool are available in two or four inch thicknesses and in 15 inch or 23 inch widths. Junior Bats are available in 4 inch thickness only. Junior Bats in bags are available in 16 inch widths only.

ADDED FIRE PROTECTION—In frame construction this insulation fills completely and permanently the usual void between the wall studs with fireproof material thus eliminating these fire carrying flues. Top floor ceilings and roofs blanketed with 4 in. of the material act as fire stops.

CONVENIENT PACKAGES—The manner in which Red Top Insulating Wool is packaged adds to its convenience in shipping and handling. Strip Wool is shipped three strips to a convenient carton. Bats are shipped in cartons. The extreme resiliency of Red Top Insulating Wool makes it possible to compress the strips and bats in relatively small volumes. Junior Bat Wool is shipped in bags slightly compressed but easily fluffed up to its original density of 1½ lbs. per cu. ft., so fluffed, the bag contains 6⅔ cu. ft. of material.

COVERAGE OF RED TOP INSULATING WOOL

Type of wool	Volume per package at standard density	Coverage per package at standard density	
		4-in. thick including 2x4's	4-in. thick excluding 2x4's
Strip wool in cartons	11¼ cu. ft.	36 sq. ft.	33¾ sq. ft.
Bat wool in cartons	12½ cu. ft. (10 bats)	40 sq. ft.	37½ sq. ft.
Junior Bat wool in paper bags	6⅔ cu. ft.	21½ sq. ft.	20 sq. ft.

Any House Can Be Insulated with Red Top Wool

Complete Insulation—Walls and Ceilings

United States U.S. Gypsum Company

Master Specifications

RED TOP INSULATING WOOL

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) WORK INCLUDED

NOTE—*Here list and locate definitely the wall, ceiling, and roof areas to be insulated.*

(2) MATERIALS

Insulation shall be Red Top Insulating Wool as distributed by the United States Gypsum Co., 300 West Adams Street, Chicago.

(2a) JUNIOR BAT WOOL—Insulation shall be Junior Bat wool type.

NOTE—*Recommended where framing requirements, thickness, or particular location make this type more practical to install on new work than the strip or bat type.*

(2b) BATS—Insulation shall be flanged paper backed bats, 4 in. thick, 15 in. wide x 36 in. long or 23 in. wide by 36 in. long, with identifying double red face stripe.

NOTE—*Recommended for new work where this type is more convenient to handle and install than Strip Wool.*

(2c) STRIP WOOL—Insulation shall be flanged paper backed strips, 4 in. thick, 15 in. or 23 in. wide x 9 ft. long, with identifying double red face stripe.

NOTE—*Due to ease of handling and rapidity of installation, this type is recommended for new work.*

(2d) NODULATED—Insulation shall be Nodulated type.

NOTE—*Specify for hand poured installations.*

(2e) GRANULATED—Insulation shall be granulated type.

NOTE—*Specify for machine "blown in" installations, particularly suited to existing work.*

(3) INSTALLATION—NEW WORK

Maintain a continuous uniformly thick blanket of insulation over all areas to be insulated.

(3a) WALLS—

(3a1) Strip Wool—Apply the insulation with the paper backing next to the back of interior finish. Holding the material in the strip form as it comes from the carton, place the exposed end of the material tight against the top framing member with the paper exposed with flanges overlapping the face of the studs and open the strip downward forcing the continuous wool strip between the studs with continuous contact at edges. Tack paper to plates at top and then tack or staple the paper flanges to studs. Where the height requires it, start a second strip at the bottom of first roll with ends

Red Top Bat Wool Installed in Attic Slope

Red Top Strip Wool Used in Side Walls

in close contact and proceed as above. Fill all irregular interstices and particularly those around the window and door frames with material cut to fit. Tack paper to sill at bottom when possible.

(3a2) Bat Type—Apply the insulation with the paper backing next to the back of interior finish. Install the bats end to end between the framing members with the paper flanges overlapping the face of the studs. Force the bats firmly against the studs and together at ends. Tack or staple the paper flanges to studs. Fill all irregular interstices and particularly those around window and door frames with bats cut to fit.

(3a3) Junior Bat Wool—Pack the Junior Bat wool, fluffed to a 4 in. thickness, between the framing members back of the plaster base. Fill all irregular interstices and around window and door frames.

(3b) CEILINGS—Permanent attic floors shall not be installed until insulation is in place.

(3b1) Strip Wool—Holding the material in the strip form as it comes from the carton, place the exposed end of the material against a wall with the paper backing down next the ceiling finish with the wool face exposed between the joists. Lay toward the opposite wall or plate, forcing the continuous wool strip between the joists with continuous contact at edges. Butt adjoining strip ends together in close contact.

(3b2) Bat Type—Lay the bats end to end over the finished ceiling with the paper backing down next the ceiling finish and the wool face exposed. Force the bats firmly between the joists, and together at ends.

(3b3) Junior Bat Wool—Lay a continuous layer **[specify]** thick over the finished ceiling between the ceiling joists.

(3c) SLOPING ROOFS—

(3c1) Strip Wool—Apply the insulation with the paper backing next to the back of interior finish. Holding the material in the strip form as it comes from the carton, place the exposed end of the material tight against the **[ridge] [collar beams]** with the paper exposed with flanges overlapping the face of the rafters and open the strip downward forcing the continuous wool strip between the rafters with continuous contact at edges. Tack or staple the paper flanges to rafters.

(3c2) Bat Type—Apply the insulation with the paper backing next to the back of interior finish. Install the bats end to end between the rafters with the paper exposed with flanges overlapping the face of the rafters. Force the bats firmly in place and together at ends. Tack or staple the paper flanges to the rafters.

(3c3) Junior Bat Wool—Pack the Junior Bat wool between the rafters.

Place tacks at 6 inch intervals in rafters and lace wire in a lattice back and forth to hold the insulation in place or tack a tough 2 in. paper strip cloth over the face of the rafters at the required spacing. Lathing and plastering shall then follow in the usual manner.

(4) INSTALLATION—EXISTING WORK

Maintain a continuous uniformly thick banket of insulation over all areas to be insulated. For open areas in attics, etc., use strip, bat or Junior Bat wool.

For enclosed sections, fill all interstices between the framing members with "blown in" granular type insulation.

All access holes for the introduction of blower hose shall be neatly and accurately made. After installation repair all such holes and leave the building in as good condition as found.

Safe Insulation Around Electric Wiring

Red Top Wool Fits Snugly in Corners

THE RED BOOK

USG

SALES OFFICES

Atlanta, Ga. . . . . 1440 Citizens and Southern Bank Bldg.
Baltimore, Md. . . . . Standard Oil Bldg.
Birmingham, Ala. . . . . 1203 Comer Bldg.
Boston, Mass. . . . . 731 Statler Office Bldg., 20 Providence St.
Buffalo, N. Y. . . . . 514 Brisbane Bldg.
Cincinnati, Ohio . . . . . 3012 Carew Tower
Cleveland, Ohio . . . . . 627-629 Hanna Bldg.
Dallas, Tex. . . . . 1301 Santa Fe Bldg.
Denver, Colo. . . . . Continental Oil Bldg.
Detroit, Mich. . . . . (At Mill) River Rouge, Mich.
Houston, Tex. . . . . 4616 Main St.
Indianapolis, Ind. . . . . 815 Architects' and Builders' Bldg.
Kansas City, Mo. . . . . 438 Ward Parkway
Los Angeles, Calif. . 507 Architects Bldg., 5th St. at Figueroa
Milwaukee, Wis. . . . . (At Mill) 439 W. Oregon St.
Minneapolis, Minn. . . . . 1308 Foshay Tower
New York, N. Y. . . . . 30 Rockefeller Plaza
Omaha, Neb. . . . . 312 Woodmen of the World Bldg.
Philadelphia, Pa. . . . . 1616 Walnut St.
Pittsburgh, Pa. . . . . 712 Grant Bldg.
Portland, Ore. . . . . 706 Spalding Bldg.
St. Louis, Mo. . . . . 806 Louderman Bldg.
San Francisco, Calif. . . . . 2501 Harrison St.
Washington, D. C. . Investment Bldg., 15th and K Sts., N. W.

Samson Plaster Board Company
Sales Agents for United States Gypsum Company
Crosby Building, Buffalo, N. Y.

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UNITED STATES GYPSUM COMPANY

BALSAM-WOOL

- HEAT INSULATION
- SOUND DEADENING

NU-WOOD

- INTERIOR FINISH
- LATH • SHEATHING
- ROOF INSULATION

WOOD CONVERSION COMPANY • SAINT PAUL, MINN.

BALSAM-WOOL—SEALED INSULATION

WOOD CONVERSION COMPANY • *District Offices:* **CHICAGO** • **NEW YORK**
ST. PAUL • **MINNESOTA** **DALLAS** • **TACOMA**

DESCRIPTION

Balsam-Wool is a flexible type of insulation. It is made from new wood fibres chemically treated to resist fire, rot, termites and vermin. The fibres are permanently processed into a fleecy mat which is manufactured to a controlled uniform density of 2.2 lbs. per cubic foot. Ninety-two percent of its volume is dead air. It is completely enclosed on both sides and edges with heavy, flexible, asphalt saturated and coated kraft liners.

Balsam-Wool is the practical equivalent of pure sheep's wool in insulation value. Its high efficiency is permanently assured by its exclusive sealed feature and its foolproof application method.

THERMAL CONDUCTIVITY

Balsam-Wool provides a high degree of resistance to the passage of heat. Tests made in laboratories show that the thermal conductivity of Balsam-Wool is as low as that of any other insulation used in building construction.

	Density	Mean Temperature	Conductivity	Resistivity	Authority
Balsam-Wool	4.8[1]	35	.25	4.00	Rowley
	3.62[1]	70	.246	4.06	Peebles

[1] Including asphalt coated kraft liners.

MOISTURE-PROOF

The fibres of Balsam-Wool are water-proofed by a special treatment in the manufacture and individual fibres are made non-absorptive.

In addition, Balsam-Wool is double-sealed with a liner of tough, durable kraft, saturated and coated with asphalt to provide the utmost in moisture protection.

WINDPROOF

The durable kraft liners of Balsam-Wool are windproof. When the insulation is securely fastened in place at edges and ends, air does not pass through or around it.

New Type Balsam-Wool Flange Fits Tightly Against Side of Stud—Is Fastened to Stud Face. Assures Air Spaces Front and Back

FIRE RESISTANT

Balsam-Wool will not support combustion. The mat is chemically treated to resist fire. It will char while exposed to flame, but will not smolder or burn after the flame is removed.

PERMANENT

Balsam-Wool is designed to be moisture, fire, wind, vermin, termite and rot resistant. The mat consists principally of cellulose. When installed in wall, ceiling, or roof construction it cannot sag, settle, or disintegrate.

DENSITY, WIDTHS AND THICKNESSES

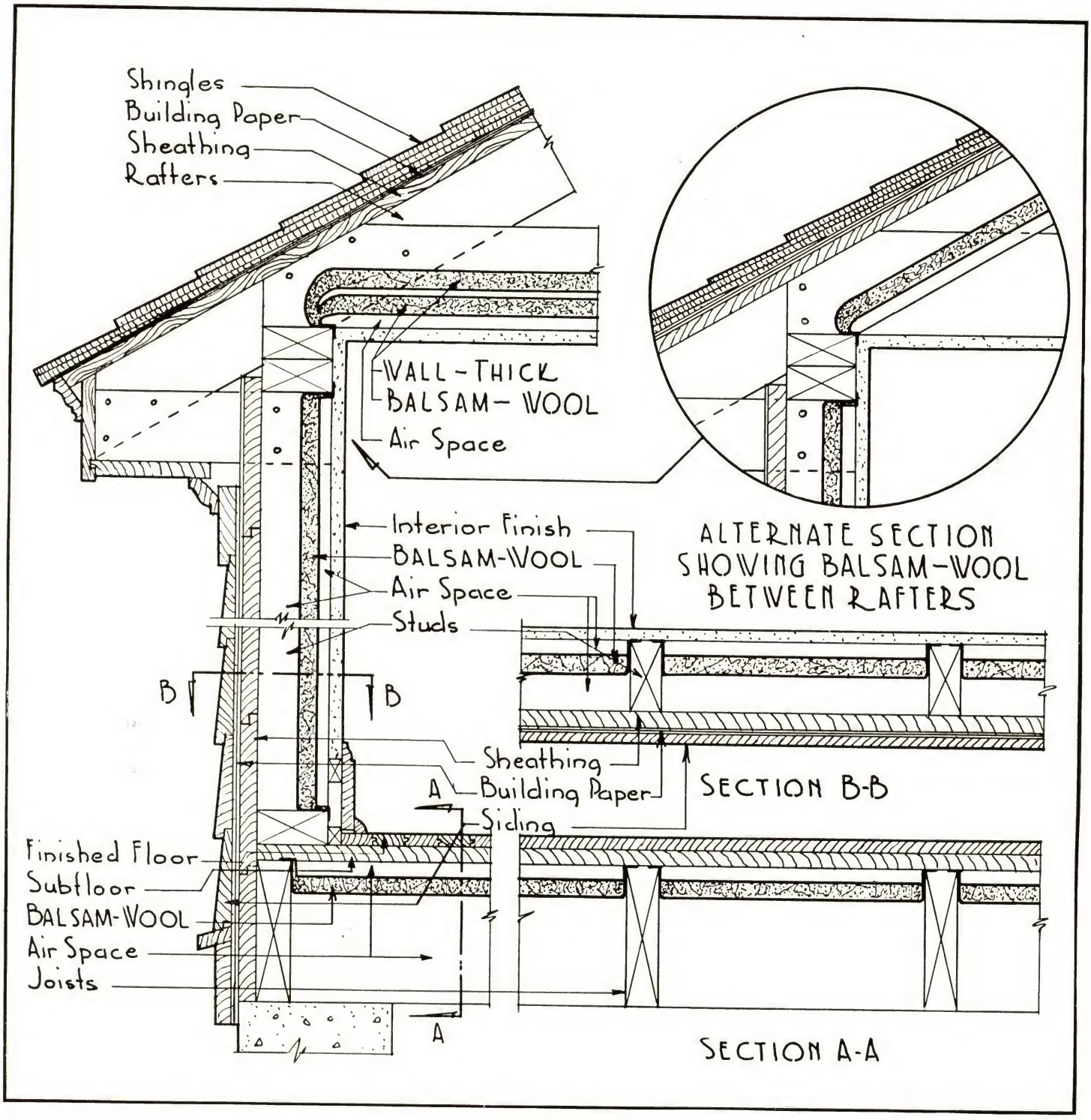
Density—Balsam-Wool Mat 2.2 lbs.
Thicknesses—½ in., 1 in., and Wall-Thick.
Widths—(½ in., and 1 in.) 16, 24, and 33 in.
(Wall-Thick) 16 and 24 in.

LOW COST OF INSTALLATION

The three standard widths meet all average construction requirements. The carpenter cuts only to length. Its flexibility makes it easy to fit into angles and around corners without waste. In its light, blanket form, it is easy and quickly installed.

BALSAM-WOOL—SEALED INSULATION

WOOD CONVERSION COMPANY, ST. PAUL, MINNESOTA



SPECIFICATION DATA

Apply continuous strips of Balsam-Wool parallel with framing members, with the folded portion of the side flange lapped over the inside edge or face of the members. Tack or staple through flange for temporary fastening until held permanently with plaster base, interior finish, or flooring. If the interior is not to be finished, apply wood strips over the edge of the framing and nail securely through flanges to form a continuous air-tight joint. Turnouts at ends shall be covered with the fibre board angles furnished with the insulation, and nailed to sills, plates, or headers. Remove a portion of the mat of wall-thick Balsam-Wool to make fastening at ends easier.

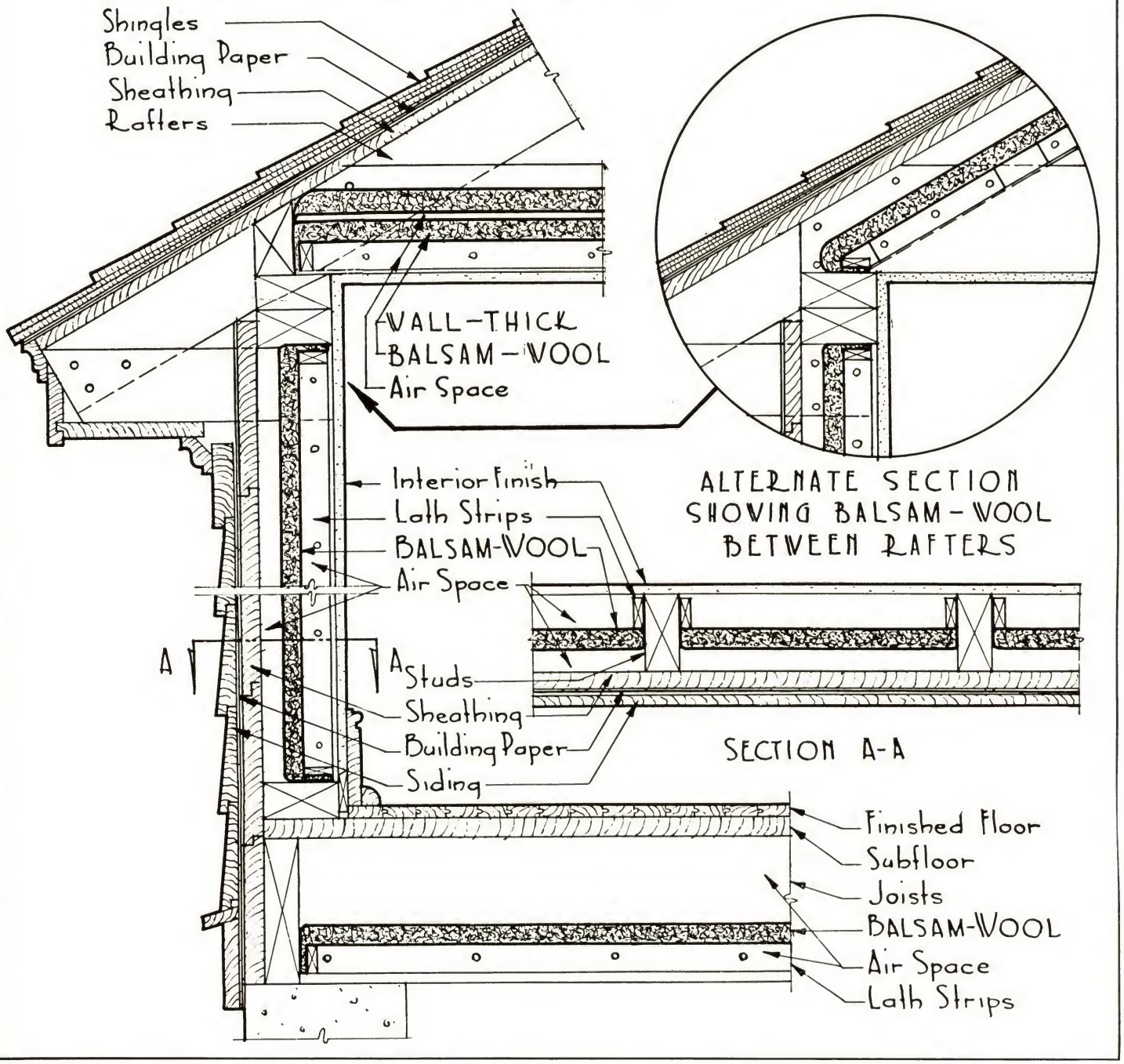
Where splicing of Balsam-Wool strips is necessary, ends shall be fastened as turnouts to a 2x4 inch header, cut between the framing members.

BALSAM-WOOL—SEALED INSULATION

WOOD CONVERSION COMPANY, ST. PAUL, MINNESOTA

BALSAM-WOOL APPLICATION DETAILS

FRAME WALLS, CEILINGS, FLOORS AND ROOFS—METHOD NO. 2



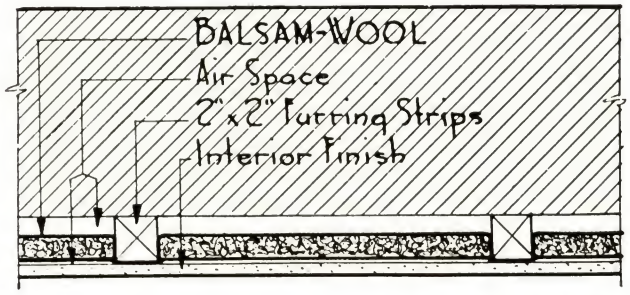
SPECIFICATION DATA

Apply continuous strips of Balsam-Wool between the framing members, leaving an air space behind the insulation. Side flanges of the insulation shall be continuously secured to sides of framing with lath strips nailed through flanges to framing. Turnouts at ends shall be covered with a lath strip and nailed to sills, plates or headers. Remove a portion of the mat of Wall-Thick Balsam-Wool to make fastening of turnouts easier. Where splicing of Balsam-Wool strips is necessary, ends shall be fastened as turnouts to the sides of a 2 x 4 in. header cut between the framing members.

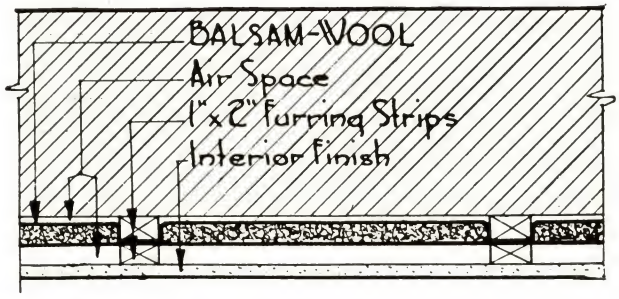
BALSAM-WOOL APPLICATION DETAILS

MASONRY WALLS

METHOD NO. 1



METHOD NO. 2



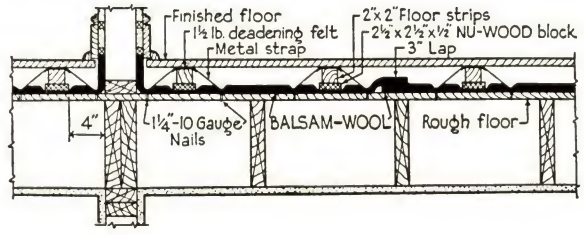
SPECIFICATION DATA

METHOD NO. 1 Fur masonry walls vertically with 2 x 2 in. furring strips set 16 in. o.c., shimmed plumb and true and substantially secured. Apply continuous strips of Balsam-Wool between furring, with side flanges lapped over the face of the furring strips. Tack through flange for temporary fastening, until held permanently with solid plaster base or interior finish. Ends of insulation shall be fastened to sills, plates or headers in a similar manner. Where splicing of Balsam-Wool is necessary, ends shall be fastened to the face of a 2 x 2 in. header cut between the furring strips.

METHOD NO. 2 Fur masonry walls vertically with 1 x 2 in. furring strips set 16 in. o.c., shimmed plumb and true and substantially secured. Apply continuous strips of Balsam-Wool between furring, with the side flanges lapped over the face of the furring strips. Tack overlapping flanges to faces of furring strips and cover with 1 x 2 in. furring nailed through flanges to first set of strips. Cut in cross furring between furring strips at top, bottom and wherever splicing of Balsam-Wool is necessary.

SOUND DEADENING

BALSAM-WOOL FLOOR DEADENING SYSTEM



Apply ½ or 1 in. Balsam-Wool (33 in. in width) over entire sub-floor with strips of sound insulation placed at right angles to finish flooring. Turn Balsam-Wool up to plaster grounds on side and ends. Place 2 x 2 in. furring strips 16 in. o.c. over and parallel to Balsam-Wool, allowing approximately 4 in. between first strip and wall. Cover furring strips with strips of deadening felt—metal straps up. Fasten with small nails at several points along furring strip to hold felt in place. Place a Nu-Wood block under furring exactly below each metal strap, striking the furring strip a sound blow to embed the block into Balsam-Wool. Nail metal straps to sub-floor, using 1¼ in. 10-gauge, barbed, large-headed, galvanized roofing nails, placing nails in holes nearest ends of strap. If first nails do not hold furring strip tightly, nail through one or both remaining holes.

Lay second width of Balsam-Wool overlapping first width about 3 in. and turn up at walls to plaster ground. Continue as above until entire surface of sub-floor is completed. Thoroughly caulk all pipe and conduit outlets with Balsam-Wool trimmings.

Note—If pipe or electric conduits are laid on sub-floor, apply Balsam-Wool over them. If pipe or conduits run under furring strips at right angles, notch strips to receive conduits, making notch of sufficient size to prevent compression of Balsam-Wool over conduit. If conduit runs diagonally under furring strips, run a furring strip parallel to conduit on one side, taking care that these strips do not come in contact with other furring strips.

Balsam-Wool Floor Deadening System accessories are packaged for convenience. Two packages comprise a unit of sufficient Nu-Wood blocks and strips of deadening felt with metal straps attached to apply 1000 square feet of Balsam-Wool.

For further information on sound insulation, see Wood Conversion Co. Insulation Handbook

NU-WOOD INTERIOR FINISH

WOOD CONVERSION COMPANY, ST. PAUL, MINNESOTA

DESCRIPTION

Nu-Wood is processed wood. Clean new wood is separated into individual fibers which are assembled under pressure to form a board of many uses, one of which is Interior Finish. Other items in the Nu-Wood line include Nu-Wood lath and Nu-Wood sheathing. These structural products serve as insulating plaster base and insulating sheathing respectively, replacing ordinary materials. These latter products are described on pages 11 and 12.

Nu-Wood Interior Finish is installed over framing members in new construction to take the place of lath and plaster, or over wall and ceiling surfaces of plaster, masonry, or wood in old construction. It needs no painting or decorating. Its soft shades and its interesting surface texture give Nu-Wood rooms unusual decorative effects. Yet Nu-Wood does more than decorate. It insulates against heat and cold. It hushes noise. It does all these things in one operation.

Nu-Wood is furnished in several color selections and in a variety of sizes as described under classifications which follow. Each unit is provided with edges which experience has shown to be best suited for carefully designed interior finish application.

THERMAL CONDUCTIVITY

The thermal conductivity of Nu-Wood as determined by Professor J. C. Peebles, Armour Institute of Technology, expressed in B. t. u. per hour per sq. ft. per degree difference in temperature is .324 at a mean temperature of 72 degrees F.

SOUND ABSORPTION

Tests by the U. S. Bureau of Standards on Nu-Wood applied directly to a plastered surface have established the following sound absorption coefficients:

Frequency	128	256	512	1024	2048	Noise Reduction Coefficient
½" Nu-Wood	.12	.19	.30	.40	.40	30
1" Nu-Wood	.14	.19	.37	.37	.41	35

When applied to furring strips, a substantial increase in sound absorption efficiency will result.

LIGHT REFLECTION

Light reflection tests have been made with average results reported as follows:

Color	Reflection Factor
Tan	.38
Variegated	.35
Ivory	.62

These factors were obtained by integrating totally reflected light from direct incident light at 30 degrees to normal of sample.

NU-WOOD BOARD

Square edge structural insulating boards, furnished in light tan or old ivory color. One side has a smooth screen finish, the other a unique individual texture. Nu-Wood Board is used on walls and ceilings with moldings of Nu-Wood, wood or metal; as a center piece in a field of other Nu-Wood units; as a border.

Sizes—4 ft. wide x 4, 5, 6, 7, 8, 9, 10, and 12 ft. long, ½ in. thick. Thicknesses up to 2 in., made by laminating ½ in. layers.

NU-WOOD BEVEL-LAP TILE

Furnished in rectangular tile units. All four edges are provided with the Bevel-Lap joint.

Cross Section Through Tile Joint

Available in light tan, variegated (ranging from light tan to rich wood brown), and old ivory colors.

Nu-Wood Tile is laid in various patterns and in combination with other Nu-Wood Interior Finish Units, such as Nu-Wood Board, Nu-Wood Moldings, Nu-Wood Plank and Nu-Wood Wainscot.

Sizes—Standard sizes 12 x 12 in., 12 x 24 in., 16 x 16 in., 16 x 32 in., 24 x 24 in., 24 x 48 in. Special sizes 6 x 6 in., 6 x 12 in., 8 x 8 in., 8 x 16 in., 16 x 48 in., 18 x 32 in., 18 x 48 in., or other dimensions can be furnished on order.

Thickness—½ in., or 1 in.

NU-WOOD BEVEL-LAP PLANK

Furnished in rectangular plank units. Available in light tan, variegated (ranging from light tan to rich wood brown), and old ivory colors.

It may be used to advantage in combination with Nu-Wood Board, Nu-Wood Bevel-Lap Tile, Nu-Wood Moldings, and Nu-Wood Wainscot.

Sizes—6, 8, 10, 12, and 16 in. wide x 6, 8, 9, 10, and 12 ft. lengths.

Thickness—½ in., or 1 in.

Cross Section Through Bevel-Lap Plank Joint

NU-WOOD WAINSCOT AND CHAIR RAIL

Surface hardened to withstand abuse of lower wall use. Texture is that of loosely woven fabric. Side edges have shiplap joint. Furnished only in deep wood-brown color to harmonize with other Nu-Wood units.

Sizes—Wainscot is furnished in 2 ft. and 4 ft. widths x 3, 4, and 5 ft. heights. Chair Rail is 2¾ in. x 8 ft. long.

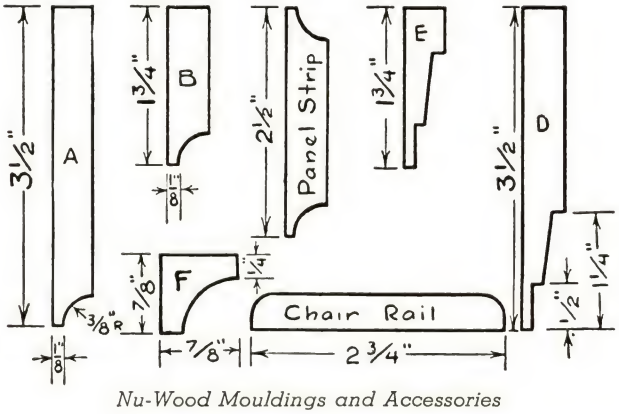
Thickness—Both Wainscot and Chair Rail are ½ in. thick.

Cross Section Through Wainscot Joint

NU-WOOD MOLDINGS

Nu-Wood Moldings are accurately fabricated from Nu-Wood Board and are furnished in light tan or old ivory color. Exposed surfaces are smooth finish.

Sizes—As detailed below left. 7/16 in. thick unless otherwise noted. All 8 ft. long.



Nu-Wood Mouldings and Accessories

BORDER STRIPS

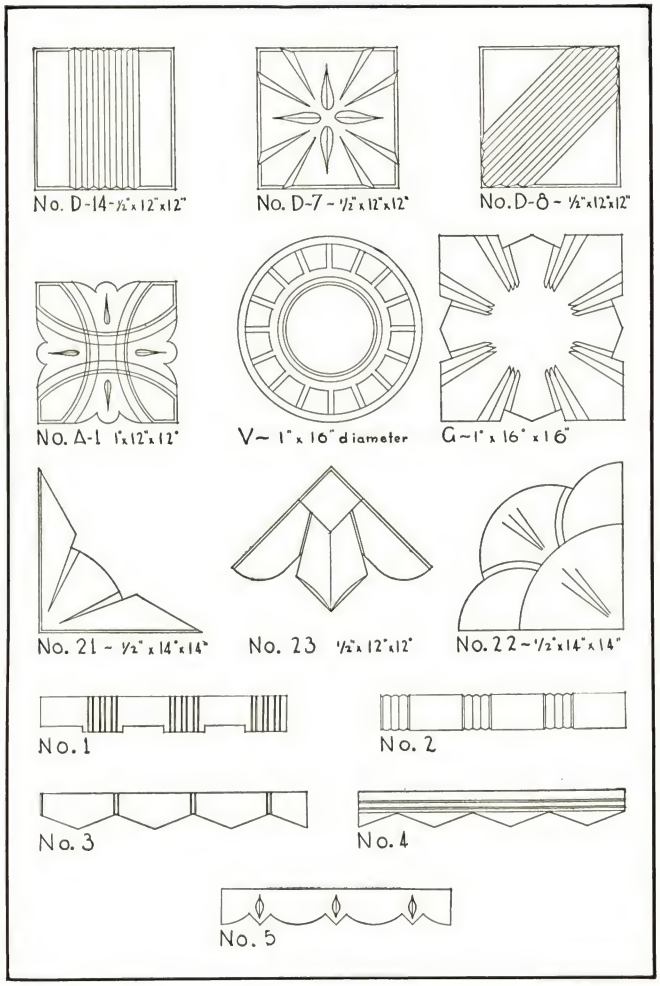
½ in. thick, 16 in. wide x 4 ft. long. Square edge on one side, square edge bevel on other side and both ends. Furnished in light tan and old ivory colors.

PANEL STRIPS

2½ in. wide x 8 ft. long with cove on both edges. Furnished in light tan and old ivory colors.

ORNAMENTS AND FRIEZES

Nu-Wood decorative tile to be used in combination with regular Bevel-Lap tile, as well as Nu-Wood ornaments and friezes to over-lay board, tile and plank treatment, are shown in a variety of designs and sizes in the details below:



Nu-Wood ornaments and friezes are available in light tan and old ivory colors. Thickness ½ in. unless otherwise noted

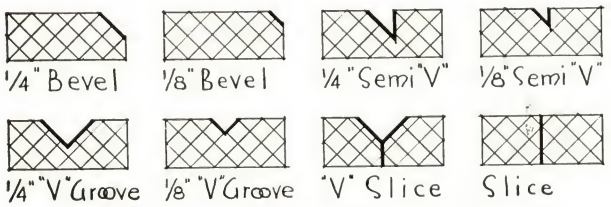
NU-WOOD INTERIOR FINISH

WOOD CONVERSION COMPANY, ST. PAUL, MINNESOTA

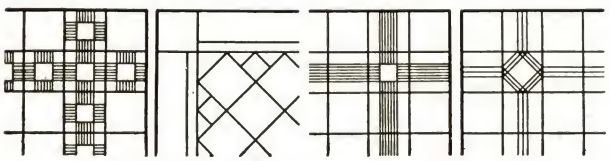
SCORING NU-WOOD

Nu-Wood ornaments and friezes are available in stock patterns as shown on Page 6. Other designs or special board and molding treatments can be made on the job by the carpenter with the aid of special bevelling planes made for this purpose. One such plane, the "Bevil-Devil," is shown below. Cuts can be made with the Bevil-Devil as illustrated below. A few border and spot beveling treatments easily made with the Bevil-Devil are also shown.

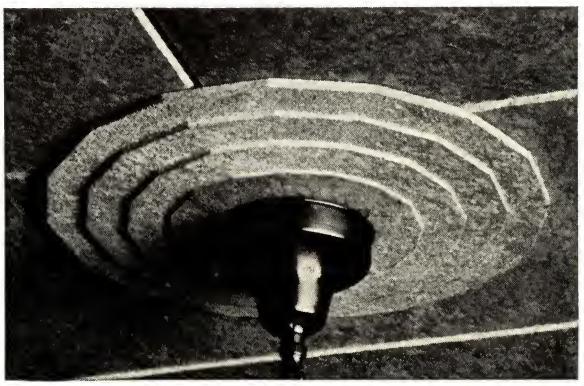
Bevel-Devil for Cutting or Scoring Nu-Wood



Cuts That Can Be Made With the Bevel-Devil



Border Design Made by Grooving Nu-Wood Board or Tile



Nu-Wood Light Base Rosette

METAL MOLDINGS

Metal moldings afford a modern decorative trim for Nu-Wood Interiors. They are used extensively for protection at openings and corners, as well as to furnish modernistic designs for entire wall and ceiling surfaces.

In general, metal moldings are of four types, one—wood core, two—insert, three—snap-on, and four—solid extruded.

These moldings are made of chromium plated metal, stainless steel, solid aluminum, brass, copper or bronze. Bright mirror or satin velvet finish may be had on all metals.

Copper Snap-on Molding for Modern Office Treatment with Nu-Wood Board

A FEW OF THE MANUFACTURERS OF METAL MOLDINGS ARE SHOWN IN THE TABLE BELOW

NAME	TYPE	METAL
Chicago Metallic Sash Co. Chicago, Illinois	Insert and Wood core	Chromium plated, steel, copper, brass and bronze
Colasco Colonial Sales Corp. New York, N. Y.	Wood core	Chromium plated, steel, copper, brass and bronze
Kinkead Kinkead Industries, Inc. Chicago, Illinois	Snap-on	Stainless steel, plain steel, brass, bronze and copper
Nu-Art Macklanburg Duncan Co. Oklahoma City, Okla.	Solid and Extruded	Aluminum
Pyramid Pyramid Metals Co. Chicago, Illinois	Snap-on	Stainles steel, brass, bronze and copper
Wernco R. D. Werner Co., Inc. New York, N. Y.	Snap-on and Filler lock	Stainless steel, aluminum

See Sweet's Catalog for other Manufacturers of Metal Moldings

DIRECTIONS FOR APPLYING WITH ADHESIVE

A special adhesive, known as "Adhestik," is available for applying Nu-Wood products. All Nu-Wood dealers can supply "Adhestik."

When Nu-Wood Units are Applied with "Adhestik" Use "Spots" About This Size

OVER PLASTER

A. Preparation of Surface

1. Old construction. The surface should be clean, free from loose dirt, grit or other impurities. Whitewash, calcimine, peeling paint or wall paper should be completely removed to insure proper adhesion between Nu-Wood and the base. Examine plaster carefully. If loose or chalky spots are found, patch as required. If surface is greasy, it must be washed clean before applying Nu-Wood with "Adhestik." Plaster surfaces of rough sand finish should be scraped to remove loose particles. All low spots and other irregularities should be checked with a straight edge and these indicated by some special mark or symbol.

"ADHESTIK" COVERAGE CHART—TABLE I

Tile Size	No. Spots Per Tile	Sq. Ft. Per Gal.	Gal. Per 1000 Sq. Ft.
6 x 12	4	38	24
12 x 12	4	77	13
12 x 24	6	77	13
8 x 16	4	69	15
16 x 16	4	100	10
16 x 32	6	134	8
16 x 48	8	154	7
24 x 24	9	103	10
24 x 48	12	154	7

2. New construction. When new plaster forms the base for Nu-Wood, it is often feasible to omit the putty or finish coat. In this case, the brown coat must be troweled to a uniform, smooth surface and applied to give a total minimum plaster thickness of ½ in. Ample time must be given for the plaster to dry and reach its full strength before the Nu-Wood is applied. Gypsum plaster is recommended.

B. Application

1. Tile and Plank. Nu-Wood Bevel-Lap Tile and Plank should be cemented to plaster with "Adhestik" applied around all edges in spots of sufficient size and quantity to insure proper adhesion. The size and number of spots of "Adhestik" will vary with the condition of plaster surface and size of tile. Large tile, such as 24 in. x 24 in., require spots of "Adhestik" at the center as well as around the edges. Pressure should be applied over the spots of "Adhestick" when sliding the tile into position. To form a good bond, the tile and plank should be worked into position with weaving or turning motion, starting one to three inches from final position. On ceiling applications where large tile are employed, use brads driven through the "Adhestik" spots to assist in holding the tile firmly in place until the "Adhestik" sets. Where irregularities in the plaster surface have been encountered and marked, apply adhesive in the proper thickness to insure a true surface.

2. Board and Wainscot. Nu-Wood Board and Wainscot should be fastened to plastered surfaces with both "Adhestik" and nails. "Adhestik" should be applied in spots about 1½ in. in diameter and about ¼ in. thick. These spots should be spaced about six inches apart over the entire area of each piece. The board or wainscot should then be worked into position with a sliding, weaving motion, starting one to three inches from the final location, pressing firmly over the spots of "Adhestik." Whenever low spots are encountered in the plaster, enough "Adhestik" should be used to shim out the Nu-Wood. The nails should be spaced every four to six inches around the edges and every 10 to 12 inches over the remaining area. Begin nailing at the center and work toward edges. Use No. 17 gauge brads of proper length to secure anchorage, driven at an angle to the surface of approximately 60 degrees. Nails should be counter-sunk to be made practically invisible.

NU-WOOD INTERIOR FINISH — APPLICATION

OVER MASONRY BACKING

A. Application

1. Tile and Plank. If surface is true and dry, apply Nu-Wood Tile or Plank directly to masonry with "Adhestik," as specifed in "Over Plaster" (Page 8.)

2. Board and Wainscot. Nu-Wood Board and Wainscot should not be applied directly to the masonry surface unless they can be glued and nailed. Where surface permits both, follow directions as specified in "Over Plaster."

OVER OTHER BACKINGS

1. Nu-Wood Tile and Plank may be applied to plaster-board, insulating board, plywood, or lumber. In each case the use of "Adhestik" or a combination of "Adhestik" and brads is recommended. Follow the directions outlined in "Over Wood Framing."

2. Nu-Wood Board and Wainscot may be applied to plaster-board, insulating board, plywood, or lumber. In each case, both "Adhestik" and nails should be used. See "Over Plaster."

DIRECTIONS FOR APPLYING WITH NAILS

Nailing Recommendations

Kind of Nail. Galvanized wire brads are recommended. When they are not available, bright wire brads may be used.

TABLE II

Tile Size	Location of Brad	No. of Brads Per Tile	Approx. Lbs. of Brads per 1000 Sq. Ft. of Tile
6 x 12	1—each corner	4	6.6
12 x 12	1—each corner	4	3.3
12 x 24	4—each long edge	8	3.3
8 x 8	1—each corner	4	7.5
8 x 16	3—each long edge	6	3.7
16 x 16	3—on each side 1—in center	9	4.2
16 x 32	5—each long side 5—on center line	15	3.5
16 x 48	7—each long side 7—on center line	21	3.3
24 x 24	4—on two sides 4—on center line	12	2.5
24 x 48	7—each long side 7—on center line	21	2.2

Quantity. The quantity of brads required for use with each size unit is shown in Table II. As a general rule, board, plank and wainscot require about 6 brads per square foot, or 4 to 5 pounds of 1¼-in. brads per thousand square feet.

OVER WOOD STRIPS

A. Where to Install Wood Strips

1. Wood furring strips should be installed over plaster surfaces in poor condition. Place strips at right angles to the framing members already installed. Wood furring strips should be used over concrete blocks, monolithic concrete, hollow tile, cinder concrete blocks, or other masonry where there is danger of moisture penetrating the wall; or where the masonry surface is uneven and, therefore, not suitable as a base. Over a masonry surface, wood nailing grounds placed not more than 36 in. on center should be inserted in the masonry joints or in the concrete surface at the time of construction. If grounds are not provided furring strips may be applied direct to hollow tile with toggle bolts and to solid masonry with plugs or expansion bolts.

B. Application

1. Tile and Plank. Install wood nailing strips spaced 8 in. or 12 in. on center in accordance with the requirements of the design. Use straight lumber of uniform thickness. Shim strips to a true level plane. See "Nailing Recommendations." Nails should be driven through tile or plank at an angle to the surface of approximately 60 degrees. Reverse the angle of half the nails. Nail through face of tile or plank—never through bead or bevel. Bury nail heads below surface with properly gauged hammer blow or with nail set.

2. Board and Wainscot. Install wood nailing strips spaced 12 in. or 16 in. o.c. If these strips are applied vertically, insert cross furring back of chair rail and baseboard and at intervals between the chair rail and baseboard not over 24 in. on center. If applied horizontally, insert cross furring at joints and at intervals not over 24 in. o.c. Nails shall be driven at an angle to the surface of approximately 60 degrees. Reverse the angle of half the nails. Nail through face of board or wainscot—never through bead or bevel. Bury nail heads below surface with properly gauged hammer blow or nail set.

OVER WOOD FRAMING

1. Tile and Plank. In new construction apply Nu-Wood Board, plasterboard, plywood, Tuffwood, Semi-Tuffwood, or lumber as backing before applying tile or plank. When lumber, plywood, plasterboard, or Semi-Tuffwood backing is used, tile or plank may be nailed or glued. With Nu-Wood or Tuffwood back-

ing "Adhestik" is recommended. See directions for applying with "Adhestik," "Over Plaster," directions for applying with nails, "Over Wood Strips."

2. Board and Wainscot. Nu-Wood Board and Wainscot may be nailed directly to framing members spaced 12 in. or 16 in. on center. Insert headers back of chair rail and baseboard and at intervals between the chair rail and baseboard not over 24 in. on center. Follow directions in "Over Wood Strips."

HOW NU-WOOD IS CLEANED

The ordinary accumulation of dust and dirt can be removed easily from Nu-Wood Interior Finish either by brushing the surface slightly with a whisk broom, or by wiping with a clean, dry, untreated rubber sponge, or a combination of both. On large jobs it is advisable to have several sponges available so that as they become dirt filled they may be washed and thoroughly dried.

Wall paper cleaner may be used in lieu of a rubber sponge. A vacuum cleaner with hose attachment is also satisfactory for cleaning Nu-Wood. The V-cut joints may be cleaned with No. 2 sand paper attached to a block of wood shaped to conform with the bevel.

HOW NU-WOOD MAY BE DECORATED

Nu-Wood is especially sized in manufacture to provide a suitable painting surface for water paints. When the entire surface is to be covered with oil paint, however, a suitable primer (which is made by most paint companies) should be applied first. Complete painting specifications will be mailed upon request.

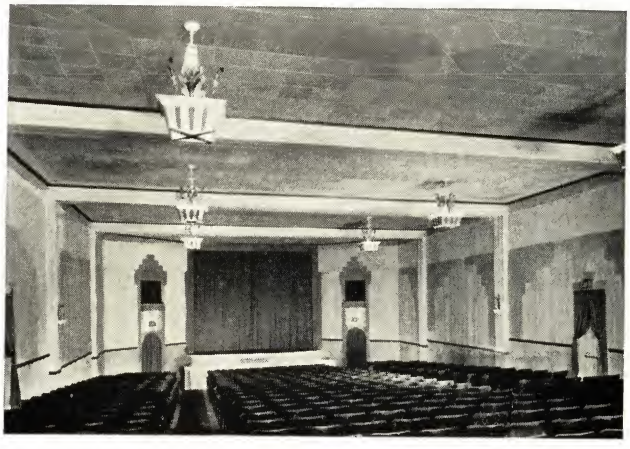
Stencils may be obtained from paint stores or from the "Ladies Home Journal," Philadelphia, Pa.

TYPICAL NU-WOOD INSTALLATIONS

In the Home

In the Office

In the Church



In the Theatre

NU-WOOD INSULATING LATH

WOOD CONVERSION COMPANY, ST. PAUL, MINNESOTA

DESCRIPTION

Nu-Wood Lath is made from standard Nu-Wood Board, cut to convenient, easy to handle units 16 in. x 48 in. in size, in either ½ in. or 1 in. thickness. Long edges interlock by means of a simple V-type tongue and groove. Ends are square cut. Nu-Wood Lath has a thermal conductivity of .324 B.t.u. per hour per sq. ft. per degree difference in temperature. Plaster forms a natural bond with Nu-Wood Lath which exceeds 1000 lbs. per square foot, or several times that of wood lath.

APPLICATION OF NU-WOOD INSULATING LATH

General—Do not moisten lath units before application. Apply lath at right angles to the framing (or furring) members with rough side exposed and V joint "tongue" up. End joints shall center over framing members. Stagger end joints in successive courses. Stagger end joints at juncture of wall and ceiling.

Where cutting is necessary, the lath shall be scored with the point of the lather's hatchet and broken along the scored line.

Where piecing out is necessary, use only strips of Nu-Wood Lath so cut that the V joint between units shall span between supports.

Accurately cut and fit lath around electrical outlet boxes, piping, etc.

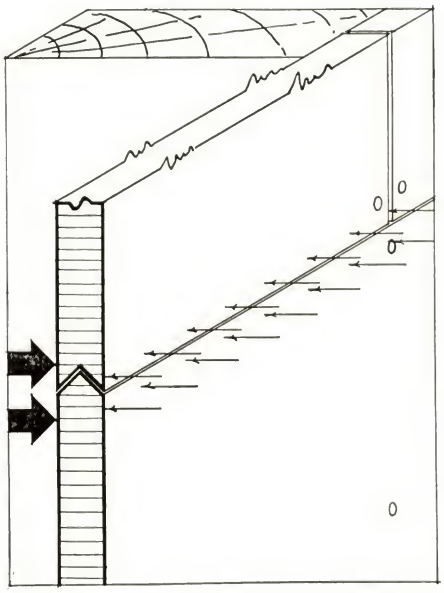
Spacing—Space ends of lath units $\frac{3}{16}$ in. apart. Bring V joint edges to moderate contact.

Nails—Use No. 13 gauge, 1⅛ in. long, blued special plasterboard nails with $\frac{5}{16}$ in. head for ½ in. thick Nu-Wood Lath.

Use No. 13 gauge, 1¾ in. long, blued special plasterboard nails with $\frac{5}{16}$ in. head for 1 in. thick Nu-Wood Lath.

Nailing—First nail units to intermediate supports, then nail ends. Space nails approximately 4 in. apart and not closer than ⅜ in. to edges.

Reinforcement—All corners shall be reinforced with standard metal corner beads. All re-entrant angles shall be reinforced with standard expanded metal angle lath strips (cornerite). Reinforcement shall be securely stapled over the Nu-Wood Lath. Cover the center joint in all room ceilings with a strip of metal lath. On all ceilings over 16 feet wide, use two additional strips of reinforcement over joints approximately midway between the center and the walls.



V-Type Tong and Groove Resists Trowel Pressure Above and Below Joint Over Entire Length of Lath

RELATED PROVISIONS

Construction framing shall be 12 or 16 in. on centers. Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association for all wood framing.

Furring—Fur all exterior masonry walls to receive Nu-Wood Lath with 1 x 2 in. furring strips set 12 or 16 in. o.c. accurately shimmed to a true, level plane. Secure substantially to masonry.

Grounds—Furnish and erect, substantially secured to framing members through the Nu-Wood Lath, full ½-in. wood grounds for all interior wood trim.

Where 1 in. thick Nu-Wood Lath units are used, add the necessary trim grounds on all door and window frames to compensate for this thickness plus a full ½ in. of plaster.

Plastering—Caution—Do not wet Nu-Wood Lath before applying plaster.

Plaster—Use standard gypsum cement plaster or gypsum wood fiber plaster for scratch and brown coats mixed accurately in accordance with the manufacturer's specifications. Use any standard plaster finish over the brown coat, such as gypsum, lime, or lime gauged with gypsum.

Note: Lime plaster or lime gauged with gypsum should not be used for scratch and brown coats.

APPLICATION OF PLASTER

Apply in three (3) coats to full ½ in. grounds in accordance with the plaster manufacturer's specification. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary, and particularly on ceilings, provide plaster screeds to insure an even, uniform full ½ in. plaster thickness.

Note: The maintenance of a uniform full ½-in. thickness of plaster cannot be too strongly stressed. Most plaster defects where a fibrous or board plaster base is used may be attributed to a weak, thin plaster coat, inadequate to withstand the normal building strains of shrinkage, settlement, and vibration.

In applying the scratch coat of plaster, this shall be carefully pressed into all joints.

If the brown coat becomes stiff and sets during darbying, wet down the surface to allow for darbying without undue pressure against the plaster surface.

Darby strokes shall be in the direction of framing members with the darby spanning two members.

Ventilation — Provide adequate ventilation for the proper drying of the plaster.

Note: Due to the moisture-proof characteristics of Nu-Wood Lath, all plaster moisture must be carried off by the air in contact with the exposed plaster surface.

Heat—Provide adequate heat to prevent injury by frost.

WOOD CONVERSION COMPANY, ST. PAUL, MINNESOTA

NU-WOOD SHEATHING SPECIFICATIONS

DESCRIPTION

Nu-Wood Sheathing is made from Nu-Wood Board processed to meet the requirements of a covering material for outside walls. It is treated to be resistant to termites, fungi, and rot. Surfaces and all edges are treated with a special waterproofing agent to seal against moisture and vapor penetration. Nu-Wood Sheathing is $\frac{25}{32}$ in. thick, 4 ft. wide and 8, 8½, 9, 10, and 12 ft. long.

Framing

Construction framing to receive Nu-Wood Sheathing shall be spaced accurately 12 in., or 16 in., on centers. Follow the standard recommendations of the U. S. Department of Commerce and the National Lumber Manufacturers Association for all framing. Insert 2 x 4 in. headers to provide bearing for all end joints when not otherwise supported by sills or plates since all edges must be supported.

Application

Apply Nu-Wood Sheathing with the length parallel with the framing members. Apply with exposed face showing markings for nails. Where possible, apply boards of sufficient length to span between sills or plates or other structural members. Center Nu-Wood Sheathing on framing, leaving a space of $\frac{3}{16}$ in. between boards around all edges. At window and door frames, bring Nu-Wood Sheathing in close contact with frames.

Nailing

Nail Nu-Wood Sheathing to intermediate framing members first, then around all edges. Use 8d common nails. Space nails 6 in. apart on intermediate framing. Space edge nails 3 in. apart and ⅜ in. in from edges. Drive nail head flush with surface of board.

Wood Siding

Apply wood siding directly over Nu-Wood Sheathing, butting joints in siding on center of studs. Nail siding at framing members only with nails of sufficient length to penetrate the framing at least 1 in.

Shingles

Install 1 x 2 in. wood furring strips over Nu-Wood Sheathing placed at right angles to framing and spaced properly to receive shingles. Nail the wood furring at framing members only with nails of sufficient length to penetrate the framing at least 1 in.

Stucco

Cover Nu-Wood Sheathing with asphalt coated waterproof building paper. Then apply self-furring wire or metal lath, nailed through to framing members, with nails of sufficient length to penetrate framing at least 1 in. If non-furring lath is used, apply 1 x 2 in. wood furring strips vertically over the waterproof paper nailed through to framing members with nails of sufficient length to penetrate framing at least 1 in. Apply lath to furring strips. Do not apply stucco direct to Nu-Wood Sheathing.

Masonry Veneer

Install stone or brick veneer in the usual manner, leaving at least ½ in. air space between the masonry and Nu-Wood Sheathing. Nail metal wall ties at framing members only, using nails of sufficient length to penetrate framing at least 1 in.

Applying Nu-Wood Insulating Sheathing to Effect Fuel Economy and Increased Structural Strength

NU-WOOD ROOF INSULATION

WOOD CONVERSION COMPANY, ST. PAUL, MINNESOTA

GENERAL

Roof insulation, to be permanently effective, must be kept dry before, during and after installation. To facilitate this axiom of good construction and enable the roofing contractor to do better and more rapid work, recommendations for Seal Course and Water Cut-Offs are included in the specifications which follow.

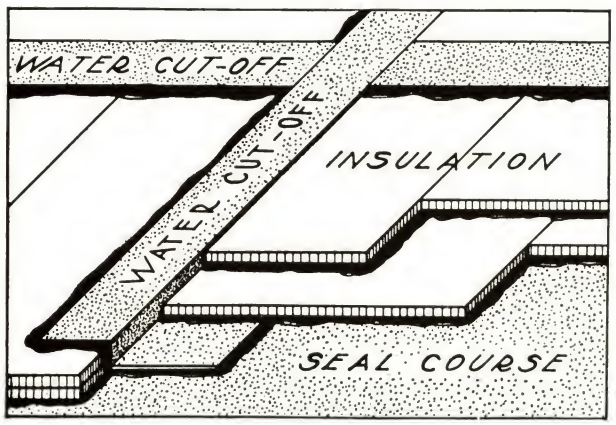
SEAL COURSE

The Seal Course consists of multiple layers of roofing felt applied over the entire roof deck beneath the insulation.

The Seal Course provides protection for the insulation against the penetration of moisture from below, and also acts as a temporary waterproof covering for the entire roof area.

WATER CUT-OFFS

Water Cut-Offs consist of strips of roofing felt or waterproof fabric and are installed to prevent the spread of moisture beyond certain predetermined areas. They also form certain logical damage-proof stopping points during the roofing installation overnight and week-ends.



NU-WOOD ROOF INSULATION

Nu-Wood Roof Insulation is furnished in units measuring 22 in. x 47 in. It is available in thicknesses of ½ in., 1 in., and multiples of ½ in. in any other practical thickness. Thicknesses of 1 in. or more are laminated—the ½ in. layers are bonded together with a continuous coating of asphalt or combination of staples and spots of adhesive. Nu-Wood Roof Insulation laminated with a continuous coating of asphalt is available with offset or flush edges. The stapled product is furnished with offset edges only.

NU-WOOD WRAPPED AND SEALED

Nu-Wood is also available in wrapped and sealed units measuring 22 in. x 47 in., in thicknesses of 1 in., and multiples of ½ in., in any other practical thickness. This product is recommended where a moisture, water and vapor-proofed insulation is required.

SPECIFICATION NO. 1
Application Over Wood Roof Decks Under Built-up Roofing

A—PREPARE DECK

(a)—INSPECTION

Broom clean the surface of the roof deck. Roof boards shall be dry, smooth and free from wide cracks and large knotholes. They shall have solid bearing at the ends (unless end matched), and shall be securely face nailed to each bearing with not less than two nails. Drive heads flush with the surface of the boards.

(b)—CANT STRIPS

When required, cant strips shall be installed at the intersections of roof surfaces with vertical walls, parapets, curbs, etc., after the application of Nu-Wood Roof Insulation. Nail cant strips through the insulation to the roof deck.

B—APPLY SEAL COURSE

Cover the roof deck with a layer of red rosin sized sheathing paper weighing not less than 5 lbs. per 100 sq. ft. Lap paper 2 in. and secure to the deck by nailing. Then apply two layers of tar or asphalt saturated rag felt weighing 15 lbs. per 100 sq. ft., single thickness, lapping each sheet over the preceding sheet 1 in. more than one-half the width. Application of felt shall start at low points and be laid at right angles to the slope of the roof. Apply a uniform coat of coal tar pitch or asphalt to the full lap so that at no point shall felt touch felt. Felt shall be laid without wrinkles or buckles and secured to the deck with occasional nailing. Lap all ends not less than 6 in. Extend felt up on all vertical surfaces not less than 8 in.

After the insulation has been laid over the Seal Course, the turned up 8 in. extensions at all vertical surfaces shall be turned back over the exposed surface of the insulation and thoroughly and firmly embedded in a uniform coat of hot bitumen.

C—PROVIDE FOR WATER CUT-OFFS

Install "moisture stops" or Water Cut-Offs during the application of the insulation. These cut-offs shall consist of strips of roofing felt or waterproof fabric 6 to 8 in. wide, thoroughly cemented to the roof, to the edge of the Nu-Wood Roof Insulation, and to the top surface of the insulation. Care should be taken to bring the felt or fabric into intimate contact with the edge of the insulation. Locate these cut-offs approximately 2 ft. from the parallel to all vertical surfaces, and around all leader heads, soil pipes, etc. The body or field of the roof shall be divided into areas of approximately 5 or 6 squares, each area isolated with a Water Cut-Off. Insert a Water Cut-Off surrounding each day's work if the stop is not made at the designated Water Cut-Off.

D—APPLY NU-WOOD ROOF INSULATION

Mop the exposed Seal Course with a coat of coal tar pitch or asphalt into which, while hot, embed Nu-Wood Roof Insulation firmly and completely. Lay insulation in parallel courses. Only sufficient area to provide complete embedment of each unit shall be mopped at a time. Bring units to a moderate contact—do not force into place. Where the insulation meets vertical surfaces, such as parapets, penthouses, etc., cut in a neat, workmanlike manner to insure proper joining without forcing.

Where multiple layers of Nu-Wood Roof Insulation are applied, lay the units of insulation parallel with those of preceding layers and with all joints staggered in relation to those of preceding layers. Mop the exposed surface of the first layer of insulation liberally (at least 25 lbs. per square) with coal tar pitch or asphalt, and embed each unit of insulation firmly and completely in the hot bituminous mopping. Only sufficient area to provide complete embedment of each unit shall be mopped at a time.

The top surface of the insulation shall be completely sealed and one ply of the finished roofing mopped to the Water Cut-Off at the end of each day's work.

FOLLOWING APPLICABLE TO WOOD ROOF DECK ONLY:

Where the incline of the deck exceeds three inches in twelve inches, nail each insulation unit in place with nails of sufficient length to penetrate into, but not through, the roof sheathing. Space nails approximately 12 in. apart o.c. along each edge and along

the longitudinal center line. Nail each corner of the unit securely. Nail multiple layers of Nu-Wood Roof Insulation through the top layer only.

E—APPLY ROOFING

Coat the exposed surface of the Nu-Wood Roof Insulation with hot coal tar pitch or asphalt, and apply roofing in accordance with the manufacturer's specifications.

SPECIFICATION NO. 2—
Application Over Roof Decks of Poured Concrete or Gypsum, or Roof Decks of Unit Tile or Slab Construction Under Built-up Roofing

A—PREPARE DECK

(a)—INSPECTION

Broom clean the surface of the roof deck. The surface shall be dry, firm and thoroughly set, free from frost and reasonably smooth without depressions.

(b)—WOOD NAILING GROUNDS

If a nailing base under sheet metal flashing, aprons, flanges, etc., is required, install wood nailing grounds. Such grounds shall be either embedded in or applied to the deck. Grounds applied to the surface of the deck shall be the full thickness of the Nu-Wood Roof Insulation, rigidly secured to the roof construction with a means of attachment as best adapted.

Where the pitch of the deck exceeds three inches in twelve inches, embed wood nailing strips in the surface of the deck parallel with the pitch of the roof, not to exceed 3 ft. o.c.

(c)—CANT STRIPS

When required, cant strips of gypsum mortar, concrete, wood, etc., shall be installed at the intersections of roof surfaces with vertical walls, parapets, curbs, etc., before the application of Nu-Wood Roof Insulation. Provide such cant strips with a square nosing equal to the thickness of the roof insulation.

B—APPLY SEAL COURSE

Note: If asphalt mopping and asphalt felt are used for the Seal Course, mop the entire deck with asphalt primer. Allow sufficient time to dry. If coal tar pitch and felt are used for the Seal Course, no primer is necessary.

In precast tile or slab construction, where the under side of the deck is exposed as a ceiling of the rooms below, it is advisable to spot or strip mop the Seal Course to the deck.

Mop the deck with coal tar pitch or asphalt, and into this mopping, while hot, apply two layers of tar or asphalt saturated felt weighing 15 lbs. per 100 sq. ft., single thickness, lapping each sheet over the preceding sheet 1 in. more than one-half the width. Application of felt shall start at low points and be laid at right angles to the slope of the roof. Apply a uniform coat of coal tar pitch or asphalt to the full lap so that at no point shall felt touch felt. Felt shall be laid without wrinkles or buckles. Lap all ends not less than 6 in. Extend felt up on all vertical surfaces not less than 8 in.

After the insulation has been laid over the Seal Course, the turned up 8 in. extensions at all vertical surfaces shall be turned back over the exposed surface of the insulation and thoroughly and firmly embedded in a uniform coat of hot bitumen.

C—PROVIDE FOR WATER CUT-OFFS

See specification No. 1—Section C.

D—APPLY NU-WOOD ROOF INSULATION

See specification No. 1—Section D.

Where the incline of the deck exceeds three inches in twelve inches, nail the insulation to the grounds provided.

E—APPLY ROOFING

See specification No. 1—Section E.

SPECIFICATION NO. 3—
Application Over Steel Roof Decks Under Built-up Roofing

A—PREPARE DECK

(a)—INSPECTION

Broom clean the surface of the roof deck. The surface shall be smooth, firm, dry and free from rust, grease or loose material. If the weather surface of the steel deck is not factory treated, mop the entire deck with asphalt primer. The deck shall be free from perforations which will allow hot bitumen to drip through, and shall be free from bolt heads or similar projections above the roof surface other than the clips and accessories required to attach the deck to the purlins.

(b)—WOOD NAILING GROUNDS

If a nailing base under sheet metal flashing, aprons, flanges, etc., is required, such grounds shall be secured to the steel deck by a means of attachment as best adapted. The grounds shall be the full thickness of the Nu-Wood Roof Insulation.

(c)—CANT STRIPS

When required, cant strips of wood, metal, etc., shall be installed at the intersections of roof surfaces with vertical walls, parapets, curbs, etc. If applied before the Nu-Wood Insulation, provide such cant strips with a square nosing equal to the thickness of the roof insulation.

B—APPLY SEAL COURSE

Note: Use asphalt saturated felt and asphalt mopping for the Seal Course. Do not use coal tar pitch mopping on steel decks.

Where the under side of the steel deck is exposed as a ceiling of the rooms below, it is advisable to spot or strip mop the Seal Course to the deck.

Mop the deck with asphalt and into this mopping, while hot, apply two layers of asphalt saturated rag felt weighing 15 lbs. per 100 sq. ft., single thickness, lapping each sheet over the preceding sheet 1 in. more than one-half the width. Application of felt shall start at low points and be laid at right angles to the slope of the roof. Apply a uniform coat of asphalt to the full lap so that at no point shall felt touch felt. Felt shall be laid without wrinkles or buckles. Extend felt up on all vertical surfaces not less than 8 in.

After the insulation has been laid over the Seal Course, the turned up 8 in. extensions at all vertical surfaces shall be turned back over the exposed surface of the insulation and thoroughly and firmly embedded in a uniform coat of hot bitumen.

C—PROVIDE FOR WATER CUT-OFFS

See specification No. 1—Section C.

D—APPLY NU-WOOD ROOF INSULATION

See specification No. 1—Section D.

If the incline of the roof exceeds three inches in twelve inches, secure the insulation in place with proper devices.

E—APPLY ROOFING

See specification No. 1—Section E.

BALSAM-WOOL

- HEAT INSULATION
- SOUND DEADENING

NU-WOOD

- INTERIOR FINISH
- LATH • SHEATHING
- ROOF INSULATION

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WEYERHAEUSER FOREST PRODUCTS

WOOD CONVERSION COMPANY • SAINT PAUL, MINN.

ACOUSTICAL MATERIALS ASSOCIATION

Palmolive Building
CHICAGO, ILLINOIS

FOR ACOUSTICAL DATA CONSULT THE A.M.A.

The Acoustical Materials Association was formed for the purpose of furnishing architects with reliable and comparable sound absorption data on acoustical materials. At periodic intervals the Association issues bulletins containing the sound absorption data on current products of all member companies. These data are all obtained in the same laboratory and under specified conditions.

Architects may use A.M.A. sound absorption coefficients in their specifications with complete confidence. The seal above identifies official A.M.A. data and assures the architect of the authenticity of sound absorption coefficients presented.

All members of the Association are recognized manufacturers of architectural acoustical materials; and membership is open to all manufacturers of legitimate acoustical materials.

Association bulletins and test data are available to architects without obligation.

COMPLETE INFORMATION

Complete information regarding the Association and its activities may be obtained from the members or their local representatives, or by addressing Acoustical Materials Association, Palmolive Building, Chicago, Ill.

ASSOCIATION MEMBERS

American Hair & Felt Company
222 North Bank Drive, Chicago, Ill.

Armstrong Cork Products Company
Lancaster, Pa.

Johns-Manville Sales Corporation
22 East 40th Street, New York, N. Y.

National Gypsum Company
Buffalo, New York

The American Gypsum Company
Port Clinton, Ohio

The Celotex Corporation
919 North Michigan Ave., Chicago, Ill.

United States Gypsum Company
300 West Adams Street, Chicago, Ill.

Wood Conversion Company
First National Bank Bldg., St. Paul, Minn.

ACOUSTIPULP, INC.

832 West Fifth Street
LOS ANGELES, CALIF.

REPRESENTATIVES

SAN FRANCISCO, CAL., Grace Bros. Ltd. SEATTLE, WASH., Tourtellotte-Bradley, Inc.
HONOLULU, T. H., Grace Bros. Ltd.

Acoustipulp—Optimal Wide Range Sound Absorption in a Permanent Fire-Resisting Covering for Walls and Ceilings

Acoustipulp is a plastic material, made of cellulose, fibered asbestos and other ingredients, with an amazing power to absorb and control sound.

It also possesses high heat insulation qualities. Serving the same purpose as plaster from a structural and architectural standpoint, Acoustipulp is adaptable to any architectural design.

Colors

It can be furnished in a wide range of colors, thereby eliminating further decorative treatment.

Application

Acoustipulp can be applied in old buildings where faulty acoustics exist, as well as in new buildings where proper acoustics are desired. It is less expensive *per unit of Acoustical absorption* than any of the acoustic plasters or boards.

Acoustipulp walls are fire-retardant, verminproof and sanitary. There can be no expansion, contraction or decay. Acoustipulp is as permanent as the wall itself.

Acoustipulp has been scientifically tested and approved (*see results on the following page*) both for its sound absorption and heat insulation qualities.

But more than that, theatres, hospitals, offices and schools in the United States, Hawaii and in many countries throughout the world owe their ideal acoustical conditions to Acoustipulp's wide range of absorptivity.

Services

ACOUSTIPULP, INC. maintains a staff of acoustical engineers whose services are available to architects without obligation — to assist in the solution of acoustical problems in all types of buildings. Write and ask how we would solve your particular problem.

10 Reasons Why Acoustipulp Is Superior As a Sound Absorber

(1) **Plastic**—Adaptable to all types of architecture.

(2) **High Efficiency**—Wide range absorption provides high absorption at all frequencies.

(3) **Low Cost**—Applied as economically as ordinary painted plaster.

(4) **Integral Coloring**—Incorporated in material. Choice of wide range of distinctive colors.

(5) **Beautiful**—Soft-textured, smooth finish.

(6) **Asbestos Base**—Fire-resistant.

(7) **Uniform Dependability**—High absorption is not dependent on mode of application.

(8) **High Heat Insulation**—Greater than that of fibrous insulation boards sold for this purpose.

(9) **Permanent**—Five-year guarantee against cracking, peeling, hardening, or falling off when applied according to manufacturer's specifications.

(10) **Proven Through Use**—In government and private construction in the United States, Hawaii, the Orient, Australia, and many other countries.

Acoustipulp Walls and Ceilings in the Fox West Coast California Theater, Salinas, Calif.

Decorated Acoustipulp Application to the Vaulted, Groined Ceiling and Walls of Kaimuki Cathedral in Honolulu

Report of Sound Absorption Test on Acoustipulp

Noise and reverberative conditions are not limited to a single frequency but cover a wide band. In selecting acoustical materials, attention should be paid to frequencies other than 512 cycles per second, the commonly used comparative frequency, especially to the lower ones.

Acoustipulp is a highly absorptive material which absorbs low as well as high frequencies. It is one of the few materials whose curve closely approximates the theoretically ideal absorption frequency curve.

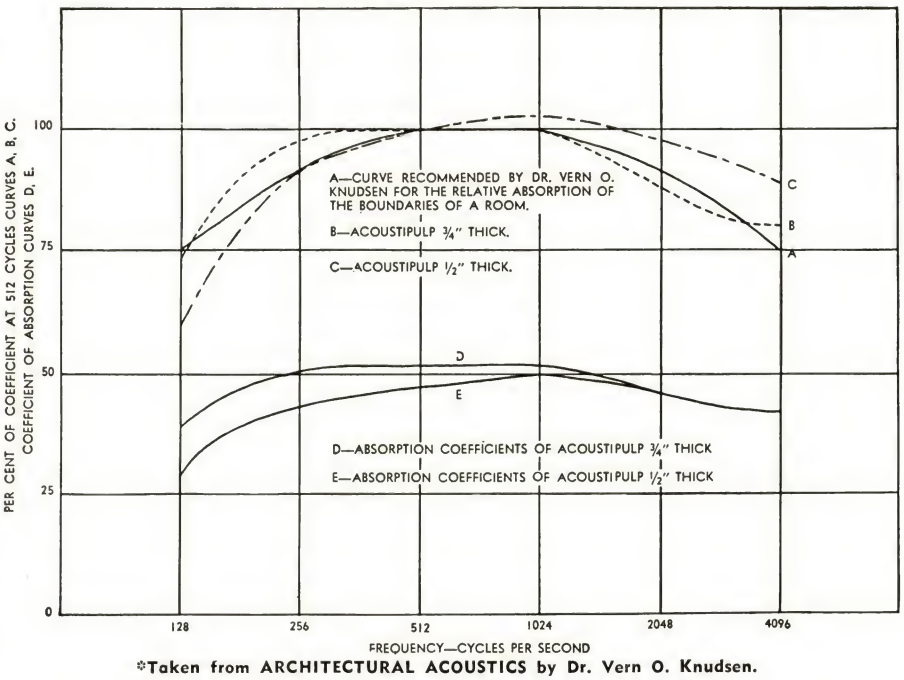
Curve A in the accompanying chart is the theoretically ideal curve, recommended by Dr. Vern O. Knudsen, eminent authority on acoustics, for the relative absorption of the boundaries of a room at various frequencies.*

Curve B shows relative absorption of Acoustipulp ¾ in. thick. It is seen to follow very closely the ideal curve recommended by Dr. Knudsen.

Curve C shows the relative absorption of ½-in. Acoustipulp. This also closely approximates the ideal curve.

Curves D and E show absorption coefficients of ¾ and ½-in. Acoustipulp. High absorption is secured at all frequencies by use of this material.

Relative Sound Absorption and Coefficients of Acoustipulp



*Taken from ARCHITECTURAL ACOUSTICS by Dr. Vern O. Knudsen.

The results of tests made by Dr. V. O. Knudsen of the University of California at Los Angeles are tabulated below. A copy of this report will be furnished on request.

Frequency of Test Tone	¼ in. thick	½ in. thick	¾ in. thick
128 cycles	.16	.28	.38
256 cycles	.37	.43	.51
512 cycles	.42	.47	.52
1024 cycles	.50	.50	.52
2048 cycles	.46	.46	.46
4096 cycles	.42	.42	.42

TRINITY 4791

CERTIFICATE

SMITH-EMERY COMPANY

CHEMISTS-ENGINEERS
800 SANTEE STREET
LOS ANGELES, CALIF

Order No. P19016 *Date* November 8, 1933

Acoustipulp, Inc.
Subway Terminal Bldg.
Los Angeles, Calif.

REPORT OF HEAT INSULATION TESTS

Tests were made to determine the relative heat conductivity of Acoustipulp, Celotex, Oregon Pine, and Hardwall Plaster.

The Acoustipulp specimens tested were molded 1/2 inch thick. The pulp was mixed with water to a consistency to be placed in molds by trowelling to approximate the same conditions used in applying to the wall by plaster.

The Oregon Pine was surfaced on both sides to a 1/2 inch thickness.

The Hardwall Plaster specimens were made of one (1) part Gypsum Hardwall Plaster to four (4) parts of Sand. They were cast in specimens 1/2 inch thick by trowelling to approximate practically job conditions.

The conductivity is expressed as heat transmitted per square foot of area per one hour, per 1°F. difference of temperature per one inch of thickness.

Results of the tests are as follows:

Mark	Thickness	Weight per cu. ft., lbs.	Mean temperature of Insulation	Conductivity
Acoustipulp	1/2"	19.5	112°F.	.335 B.T.U.
Celotex	1/2"	15.1	117°F.	.349 "
Oregon Pine	1/2"	34.0	105°F.	.935 "
Hardwall Plaster	1/2"	134	104°F.	2.16 "

Respectfully submitted,

Smith-Emery Co

INSPECTING & TESTING ENGINEERS

Report of Heat Insulation Test on Acoustipulp

Plastic Acoustipulp applied to walls and ceilings provides high heat insulation. The results of tests made by Smith-Emery Company may be seen in the accompanying report. Lower conductivity means higher insulation. Acoustipulp is seen to have higher heat insulation value than the same thickness of fiber board designed expressly for this purpose.

Suggested Specifications for Use of Acoustipulp In Construction

New Areas Treated—Acoustical treatment shall include the following areas as specified:

Preparation of Base to Receive Acoustipulp—A scratch and brown coat of gypsum plaster shall be applied to all surfaces. Over concrete or masonry a brown coat is sufficient. The brown coat shall be straightened and the entire area deeply scratched or raked, in one direction only, with a half-inch comb. The comb shall have teeth cut in a V-shape approximately ½ in. deep and ½ in. from point to point.

Application—After the brown coat has become thoroughly dry, Acoustipulp manufactured by ACOUSTIPULP, INC., Los Angeles, shall be applied in ¼-in. coats up to the desired thickness. Each coat shall be allowed to dry thoroughly before the application of the following coat. Color shall be supplied integrally, mixed with the finish coat as selected by the architect.

It is recommended that a 5-ft. wainscot of hard plaster be provided on all walls on which Acoustipulp is specified.

Treatment of Existing Areas—Surfaces of existing plaster or masonry walls and ceilings shall be covered with a brown coat of gypsum, Keene, lime, or portland cement plaster which shall be scratched as in new construction. Oil paint, sizing, or waterproofing must be removed from walls and ceilings prior to application of the plaster coat to provide a strong bond. Wire may be furred over existing plaster and the area treated as in new work if desired. A wooden chair rail with necessary grounds shall be provided at a height of at least 5 ft. from floor.

ARMSTRONG CORK PRODUCTS COMPANY

Acoustical Tiles–Corkoustic and Temcoustic 50

LANCASTER, PA.

BRANCH OFFICES IN PRINCIPAL CITIES

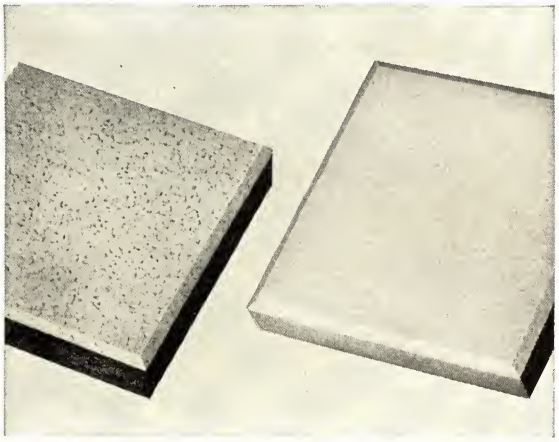
CORKOUSTIC

Corkoustic is a cork acoustical tile for noise-quieting or acoustical correction in schools, natatoriums, auditoriums, churches, hospitals, offices, restaurants, and stores. It has a distinctive fissured surface that gives travertine-like effects. Made from individual particles of cork, no two tiles are exactly alike in pattern, thus eliminating mechanical regularity of texture.

High Sound Absorption—Corkoustic 1½ ins. thick has a sound-absorption efficiency of 62% at a frequency of 512 cycles, thus preventing excessive reverberation. Its noise reduction coefficient is 50%. It is approved by authorities on sound control.

High Light Reflection—The incident light totally reflected from Armstrong's Corkoustic finished with Armstrong's Acoustic Paint ranges up to 79.4%, depending upon the color selected. This figure is exceptional in acoustical tiles.

Thermal Insulation—Corkoustic is a highly efficient barrier against the passage of heat. Its thermal conductance is .18 B.t.u. per sq. ft., per degree temperature difference, per hour, for 1½-in. thickness. This characteristic of Corkoustic is of special value in air conditioned buildings or buildings that will be air conditioned in the future, as well as for uninsulated top stories.



Left: **Close-up of Corkoustic Showing Distinctive Texture**
Right: **Close-up View of Temcoustic 50**

Colors—Armstrong's Corkoustic is furnished factory-painted in white, ivory, and buff with Armstrong's Acoustic Paint (oil base and washable), or in any other colors to order.

Designs—Interesting and individual designs for ceilings and walls may be created with various colors and sizes of Armstrong's Corkoustic. Its decorative possibilities are limited only by the ingenuity of the designer. Suggested designs in color are offered in "Decorative Walls and Ceilings That Quiet Noise and Correct Acoustics." Other designs are offered in "How to Reduce Noise," available upon request.

Cleanliness—Because Corkoustic is cellular, it has no fibres to hang down from the surface to attract or hold dirt. And since it resists the passage of air, dirt cannot filter out upon the exposed surface. Corkoustic does not harbor or attract vermin, germs, or odors.

Ease of Washing and Repainting—Corkoustic can be cleaned by washing and can be repainted (with Armstrong's Acoustic Paint) without loss of efficiency. The average Corkoustic installation does not require cleaning or repainting more than once every six to ten years.

Structural Strength—The structural strength of Corkoustic is adequate to hold the tiles true and rigid after installation. It is tough, resilient, light in weight, and sufficiently flexible to be bent over slight curves.

Ease of Application—Corkoustic can be applied easily in existing or new buildings by cementing with Armstrong's No. 400 Acoustical Adhesive or No. 306 Waterproof Cement, or by nailing, or by mechanical systems. Its structural strength adds to its ease of application. It can be sawed, cut with a knife or rasp, cemented, or nailed.

Durability and Moisture-Resistance—Due to the remarkable resistance of cork to moisture and temperature changes, Corkoustic does not disintegrate or deteriorate in natatoriums or other high-humidity rooms. It does not shrink, swell, warp, or mould. It is resilient and not unduly fragile.

Fire-Resistance—Tests by University of Pennsylvania, Columbia University, and Massachusetts Institute of Technology have been passed by Corkoustic. Rated highly fire-resistant, it does not increase insurance on fireproof buildings.

Weight and Sizes

Weight—Less than 1 lb. per sq. ft.

Sizes—Armstrong's Corkoustic is available in sanded beveled tiles 1½ in. thick ($\frac{1}{16}$ in. tolerance allowed for sanding).

Field Tile—6x12, 9x9, 12x12, 9x18, 12x18, 18x18, 9x24, 12x24, 24x24, and 12x36 in.

Border Tile—5⅞x36, 7x36, 9x36, 12x18, and 12x36 in.

Special sizes can be furnished to order; also diagonal half tiles cut from any regular square field-tile sizes; also Corkoustic moldings in several shapes.

Armstrong's Corkoustic Ceiling Quiets the Directors' Room of Monsanto Chemical Co., St. Louis
MAURON, RUSSELL & CROWELL, Architects

TEMCOUSTIC 50

Armstrong's Temcoustic 50 is a low-priced, textured acoustical tile, ⅞ in. thick, with a sound-absorption coefficient of 55% at a frequency of 512. Its noise-reduction coefficient is 45%. It is made from the fibres of longleaf yellow pine.

It is supplied painted in white, ivory, or buff. Special colors can be had upon request. Temcoustic 50 can be repainted with Armstrong's Temcoustic Paint with only slight loss of efficiency. It does not require constant attention to keep it clean. Accumulation of dirt due to "breathing" is negligible.

Temcoustic 50 is a good heat insulator (thermal conductivity of .31 B.t.u. per sq. ft. per degree temperature difference, per hour, per inch thickness). Its light-reflection value is 65% to 75%, depending upon the color of the paint finish.

Sizes—12x12 and 6x12 in. only, ⅞ in. thick. No half tile, border material, or other sizes. However, some beautiful effects can be obtained by using 1⅛-in. thick Corkoustic borders with the ⅞-in. Temcoustic field tile.

Installation—Temcoustic 50 can be installed over plaster, concrete, building board, wood, or metal with special Armstrong adhesives. Facenailing is not recommended.

High Humidity Rooms—In rooms of high humidity, such as natatoriums, Temcoustic 50 should not be used.

SPECIFICATIONS FOR INSTALLING ARMSTRONG'S ACOUSTICAL TILES

Brief Specifications—Armstrong's (Corkoustic or Temcoustic 50) shall be furnished and installed in a design and color to be approved by the architect (or owner) in accordance with standard Armstrong specifications, by a qualified contractor, whose work has been approved by the ARMSTRONG CORK PRODUCTS COMPANY.

Note: Standard specifications for Armstrong's Acoustical Tiles are available upon request.

Preparation of Bases

Plaster—In new construction, the white coat should be omitted, but the brown coat should be true, even, and smooth. All plaster must be thoroughly dry and seasoned throughout. New unpainted plaster should be washed with a 10% solution of zinc sulphate or treated with Armstrong's Wall Size.

In old construction, all plaster must be sound and firm.

All dirt or grease, and any previous covering or finishes (paper, burlap, water paint, whitewash, etc.), must be completely removed. Oil paints or enamel, if judged to be of excellent quality, need not be removed but should be thoroughly scored and cut through to the plaster with a coarse No. 3 sandpaper.

Any cracks or holes should be repaired with patching plaster, which, when dry and hard, should be sanded smooth and level. If old plaster is unduly porous or dusty, apply a size coat of Armstrong's Wall Size.

Concrete—Unpainted concrete should be washed with a 10% solution of zinc sulphate or treated with Armstrong's Wall Size. If concrete is reasonably even and level, preparation is the same as for plaster surfaces. Otherwise, stripping and furring are advisable. 2 x 4's on 36-in. or not more than 48-in. centers should be bolted to the ceiling with the 4-in. face of the timbers parallel to the ceiling line. Expansion bolts or other suitable fixtures on 48-in. centers may be used to anchor the strips. 2 x 4-in. finished and seasoned furring strips on centers not greater than 12 in. should be nailed at right angles and positioned to coincide with the seams between the acoustical tile and to accommodate the border.

Building Boards—Hard-pressed building boards and boards having a core of plaster faced with smooth cardboard, installed in small sizes (16 x 32-in.), can be used although they are not recommended. Boards of laminated paper pulp (not waterproof) or loose-pressed fibrous boards should not be used. The rough or "wire" side of the hard-pressed board should be turned outward, and the boards well facenailed. If the joists are on centers greater than 12 in., it is necessary to insert cross headers for ample facenailing space.

Joinings between the boards should always be made on the joist and be left open at least $\frac{1}{16}$ in. All adjoining edges should be smooth and sanded after nailing. Nails should be driven flush with the face of the board, but without denting. Joinings between the acoustical tiles should never coincide with joinings between boards.

Wood Ceilings—Existing ceilings of solid wood must be even, tightly nailed, and of such a nature that there will not be undue expansion and contraction. All solid wood ceilings must be of finished lumber with boards having a face no greater than 3½ in. Never apply acoustical tiles over green or unseasoned lumber or to boards not securely fastened.

Where the ceiling has not yet been installed, or where it is necessary to raze an old ceiling, acoustical tiles can be applied to 2 x 4-in. finished and seasoned furring strips nailed to the joists (see "Concrete"). Such furring should be leveled.

Metal Ceilings—Acoustical tiles cannot be applied directly to ceilings of embossed, corrugated, or plain sheet metal. 2 x 4-in. finished and seasoned furring should be applied over the metal.

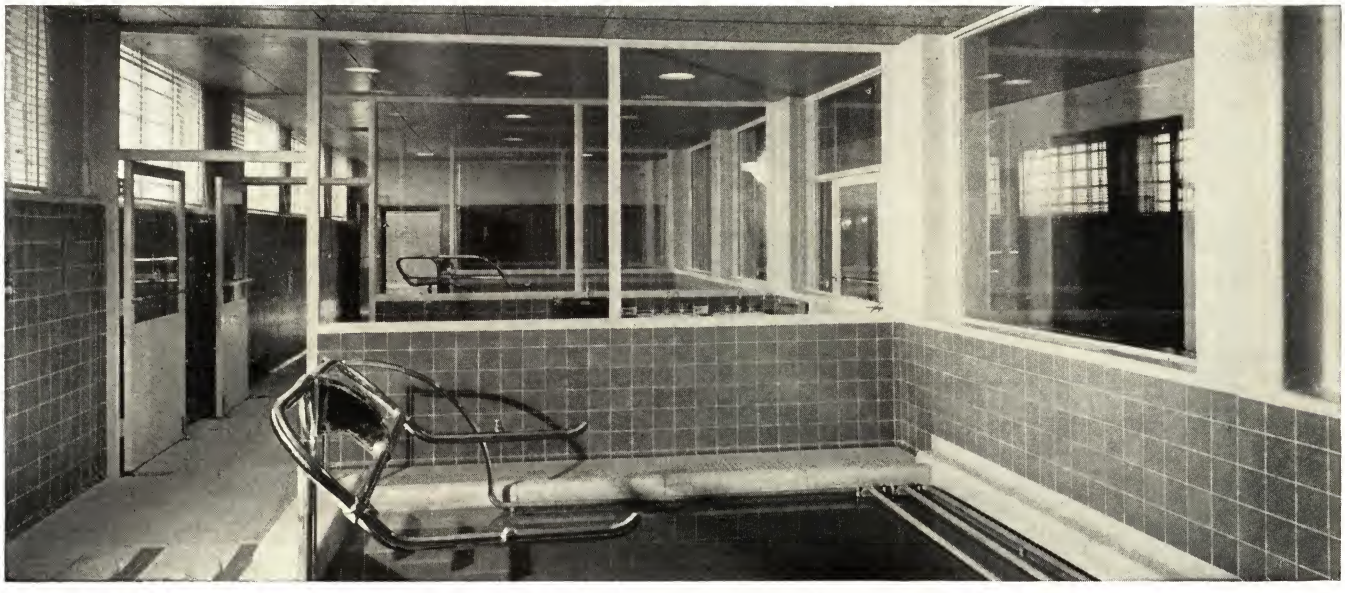
Fixtures—In new construction, all wiring, switches, and junction boxes must be permanently installed before applying acoustical tiles. Fixture canopies, hanging lights, and other portable equipment should be installed after the acoustical tiles.

Adhesives—Under ordinary conditions, Corkoustic and Temcoustic 50 can be applied to wood surfaces with Armstrong's No. 400 Acoustical Adhesive, and to all other surfaces with No. 306 Waterproof Cement. In high humidity rooms, Corkoustic should be installed with Armstrong's No. 306 Waterproof Cement only. Temcoustic 50 should not be used in such rooms.

LAYOUT, DESIGN, AND TECHNICAL SERVICES

Detailed layouts drawn to scale are advisable for every job. Armstrong's Architectural Service Bureau will furnish these to architects or accredited contractors; also data on mechanical systems, methods of installation, and general information on acoustical problems.

The services of the Armstrong Bureau of Interior Decoration also are available to architects in the preparation of distinctive designs and color schemes for use with Corkoustic or Temcoustic. There is no charge or obligation for any of these services. For further details, complete catalogs, or specifications, write to ARMSTRONG CORK PRODUCTS COMPANY, Building Materials Division, Lancaster, Pa.



In Hydrotherapy Pool of Denver Children's Hospital, Corkoustic's Insulating Properties Are Valuable

BURNHAM HOYT, Architect

BURGESS BATTERY CO.

ACOUSTIC DIVISION

SALES OFFICE

111 W. Monroe Street, Dept. C, CHICAGO, ILL.

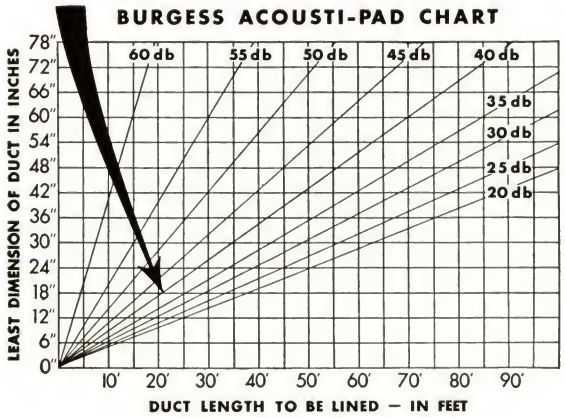
BRANCHES IN PRINCIPAL CITIES

PRODUCTS

Acoustic and thermal insulation materials consisting of perforated metal or other durable substance over an acoustic absorbent and thermal insulation.

Communication Booths, Ventilation Systems; and Industrial Air Cleaners, Silencers, Mufflers, and Engine Hoods for Diesel and other internal combustion engines.

HOW TO SUPPRESS DUCT NOISES



First, determine the noise level of the room. Second, check Burgess Acousti-Pad chart for duct length of Burgess Acousti-Pad. For example: Assume room noise level of 40 db and a duct section of 18x48 in. The least duct dimension is 18 in. On the chart, the 18-in. duct dimension intersects the 40 db line at 20 ft. 10 in. Hence, specify 21 linear feet of Burgess Acousti-Pad for the duct.

NOISE LEVELS IN DECIBELS

Area	Max.	Min.	Typical
Radio studios	20	10	14
Auditoriums	40	25	30
Legitimate theaters..	35	25	30
Movie theaters.....	40	35	30
Residences, etc.	40	25	35
Churches	40	35	30
Libraries	45	30	40
Classrooms	50	30	40
Private offices.....	50	40	45
Department stores...	70	50	60

BURGESS ACOUSTI-PAD

Burgess Acousti-Pad consists of a 1 in. pad of Balsam-Wool faced with perforated metal terne plate. Over 4,000 perforations per square foot permit sound to reach the absorbent pad, at the same time protecting the soft material from high air velocities and making it flameproof. It is odorless.

Burgess Acousti-Pad is supplied in standard packages, and may be installed by sheet metal workers at the same time as the fabrication of the air ducts. Its installation adds rigidity to the duct, permitting lighter sheet metal in the duct wall than is ordinarily required. If acoustically treated ducts are to be installed, the external size should be 2 in. greater in each dimension to allow for the thickness of the acoustic absorbent and the perforated metal. The perforated surface does not offer appreciable additional restriction to the flow of air.

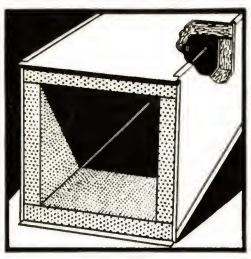
Where the recommended length of Burgess Acousti-Pad cannot be installed due to short turns or insufficient length between the outlet grille and the fan, "splitters" may be installed. These consist of lateral panels made of two sheets of Burgess Acousti-Plate with 1 or 2 in. thickness of Balsam-Wool padded between the perforated plates. The outside dimensions of the duct are made larger, so as to permit the normal cross section for air passage plus the sectional area occupied by the splitters.

Burgess Acousti-Pad Data Sheets Nos. 111, 113, and 114 contain complete information for the necessary acoustic calculations, the determination of duct length, and the method of fabricating Burgess Acousti-Pad in duct lining.

Sound absorption coefficient at 1024 cps, 80% (by Sabine). Thermal coefficients, conductivity .246, resistivity 4.06, mean temperature 70° F.

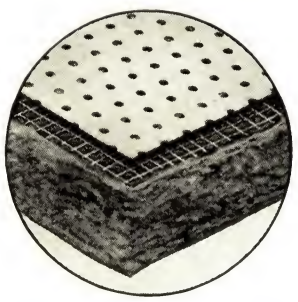
Order Burgess Acousti-Pad in standard packages of 12 sheets 34x36 in. with perforated buttons for mounting in ducts and self-tapping screws. Shipping weight, approximately 123 lbs. f.o.b. Madison, Wis.

Licensed under C. F. Burgess Laboratories, Inc., Patents



Above:
Cut-away View of a Small Rectangular Duct Lined with Burgess Acousti-Pad

Right:
Workman Assembling Length of Duct Lined with Burgess Acousti-Pad



Close-up View of Perforated Metal Resting on Sound Absorbent Material
Combination referred to as Burgess Acousti-Pad

CALIFORNIA STUCCO PRODUCTS COMPANY

169 Waverly Street
CAMBRIDGE, MASS.

122 East 42nd Street
NEW YORK, N. Y.

Acoustical Plasters
STUCOUSTIC, TYPE A.D. and
STUCOUSTIC, TYPE A.C. for casting.

Other Products
Exterior Cement Stucco, Interior Colored Plasters, Caenstone, Travertine, Colored Floor Finish.

STUCOUSTIC (TYPE A.D.)—AN ACOUSTICAL PLASTER

For Economical Sound Absorption and Sound Control

Low Cost—Integral Colors—Architectural Adaptability

Description

Stucoustic was developed to obtain an acoustical plaster that the skilled artisan could readily apply, that would be economical to the owner, and truly permanent, and that would fit accurately into the design of the architect and the acoustical expert. It is unique among acoustical plasters.

Stucoustic can be finished with a steel trowel to a smooth, sanitary, high light-reflecting surface without impairing its remarkable sound-absorbing capacity. It can be furnished white or colored to any desired shade.

With this finish, all particles of aggregate are completely embedded in the body of the plaster, the surface is comparatively smooth, sanitary, high light reflective. It requires less paint for re-decoration and therefore, painting does not appreciably reduce the sound-absorption.

International Casino, Times Square, N. Y. C.

THOMAS W. LAMB, Architect
J. J. SECOLES, General Contractor
A. BUONODONO & SONS, Plastering Contractor
Stucoustic Ceiling and Walls

Stucoustic can also be floated, stippled, textured, antiqued, or finished in other ways as desired.

Application and Painting

Application—Regular plasterers apply Stucoustic. It is mixed to the consistency of ordinary mortar and applied to a brown coat of gypsum, portland cement, or lime plaster. One plasterer will normally apply from 8 to 10 sq. yds. of ½-in. Stucoustic per hour.

Painting—Water-mixed paints, sprayed on, are recommended. Test data of Stucoustic spray painted with five coats of water mixed paint shows a reduction of 2% of sound absorption. Painting instructions furnished on request.

Casting—Stucoustic Type A.C. is for casting purposes; it sets rapidly and produces strong sharp castings. It can be integrally colored or painted.

Specifications for Stucoustic, Type A.D. Acoustical Plaster

Areas to receive acoustical plaster shall be given a scratch and brown coat in the ordinary manner. The surface of the brown coat shall be scored or cross scratched for bond and allowed to dry thoroughly before the application of the acoustical plaster.

Note: Where Stucoustic is subjected to high humidity or periodic wetting, no gypsum shall be used in base coats. Use plaster base coats consisting of equal parts by weight of portland cement and hydrated lime and two parts of sand.

Stucoustic Plaster shall be applied to the dry base coat without sprinkling or otherwise reducing the suction in coats, about ¼ in. thick, to a total thickness of Stucoustic of ½ in. (or ¾ in. as desired). *Note: A total thickness of less than ½ in. is not recommended.)* The surface shall be finished as directed by the architect and all mixing and application of Stucoustic shall be done in accordance with the instructions of the CALIFORNIA STUCCO PRODUCTS COMPANY and under the direction of their representative.

SOUND ABSORPTION TEST DATA

Results of tests made by Bureau of Standards as listed below. All samples were applied to gypsum base coat plaster and steel trowel finished.

Stucoustic Type	Thickness, in.	Coefficient of Sound Absorption				
		128	256	512	1024	2048
A.D.	½	.14	.16	.49	.59	.61
A.D.	¾	.18	.36	.65	.65	.62

A Few Stucoustic Jobs and Their Architects

First National Bank of New York, New York; *Walker & Gillette*
Harvard Club, Boston; *William T. Aldrich*
Union Club, New York; *Delano & Aldrich*
Trumbull College, Yale University; *James Gamble Rogers*
Christian Science Publishing House, Boston; *Chester Lindsey Churchill*
White House, Washington, D. C.; *Eric Gugler*
Harvard Congregational Church, Brookline; *Allen & Collins*
Academy of Medicine, New York; *York & Sawyer*
Melrose High School, Melrose, Mass.; *J. Wm. Beal & Sons*

Service

Our Service Department will supply complete specifications on request, and a supervisor will be sent to each job to advise as to the proper installation of Stucoustic Acoustical Plaster and preparation of the base coat.

R. GUASTAVINO COMPANY

40 Court Street
BOSTON, MASS.

500 Fifth Avenue
NEW YORK, N. Y.

REPRESENTATIVES

ATLANTA, GA.
CINCINNATI, OHIO
CLEVELAND, OHIO
DETROIT, MICH.
NEW ORLEANS, LA.
PITTSBURGH, PA.
ST. LOUIS, MO.
SAN FRANCISCO, CALIF.

CANADA: R. GUASTAVINO CO. OF CANADA, LTD.
660 St. Catherine Street, West, Montreal

PRODUCTS

GUASTAVINO TIMBREL ARCH CONSTRUCTION.
SPECIAL CERAMIC TILE, glazed and unglazed.
RUMFORD CERAMIC ACOUSTIC TILE.
AKOUSTOLITH sound-absorbing stone, in tile and ashlar sizes.
AKOUSTOLITH sound-absorbing plaster.
CASTACOUSTIC sound-absorbing casting plaster.
PLASTACOUSTIC sound-absorbing plaster.

SERVICES

This Company maintains an experienced engineering staff to work and consult with architects on all problems concerning the use of its products, both structural and acoustical.

EXHIBITS

The R. GUASTAVINO COMPANY maintains a complete exhibit of its products in its New York Office and also in the Architects' Sample Corporation at 101 Park Avenue, New York, N. Y.

GUASTAVINO TIMBREL ARCH CONSTRUCTION

This type of fireproof construction, first introduced into the United States in 1885 by the late R. Guastavino, Sr., has been used in domes of more than 130-ft. span. It is light and shell-like, a three course arch weighing only 40 lbs. per square foot.

The vaulting can be designed to carry any load desired for residence, office, ecclesiastical or heavier bridge work, tests for fire and load having been passed by the New York Building Department and the Massachusetts Institute of Technology.

Method of Construction

Tiles 6x12 in. to 6x24 in., 1 in. thick are laid flat in cement mortar and bonded together to make a solid and homogeneous mass. For ordinary three course work, the crown of the arch is about 4 in. thick.

While domes or vaults may show exterior as well as interior lines exposed as part of the design, they are also built with an exterior leveling to obtain flat or sloping surfaces. In the case of floor vaults, this is done by "bridges and flatwork" formed by dwarf walls about 24 in. on centers which carry the tile leveling. The air cells so formed are often used for concealing heating and ventilating ducts.

Architectural Adaptability

Guastavino Construction affords a wide range of possibilities in the matter of design as it can be used in practically any architectural style. (See typical details on following pages.) The rough tile soffit may be exposed, or a finish tile used. If a finish surface is wanted we manufacture and install glazed and unglazed ceramic tile, and AKOUSTOLITH Sound-absorbing Tile.

Engineering Services

It will be readily seen by examining the detail drawings that we must necessarily work in close co-operation with the architect. For vault, dome or arch work of a constructive nature our engineers will work with the architect to obtain the effect he desires and then design the construction to fit the requirements.

Specifications

Specifications will be written by us for this work and its relation to other work in the building.

For typical specifications with AKOUSTOLITH Tile soffit course, see page 3, AKOUSTOLITH Tile specifications Ceiling Work—(a).

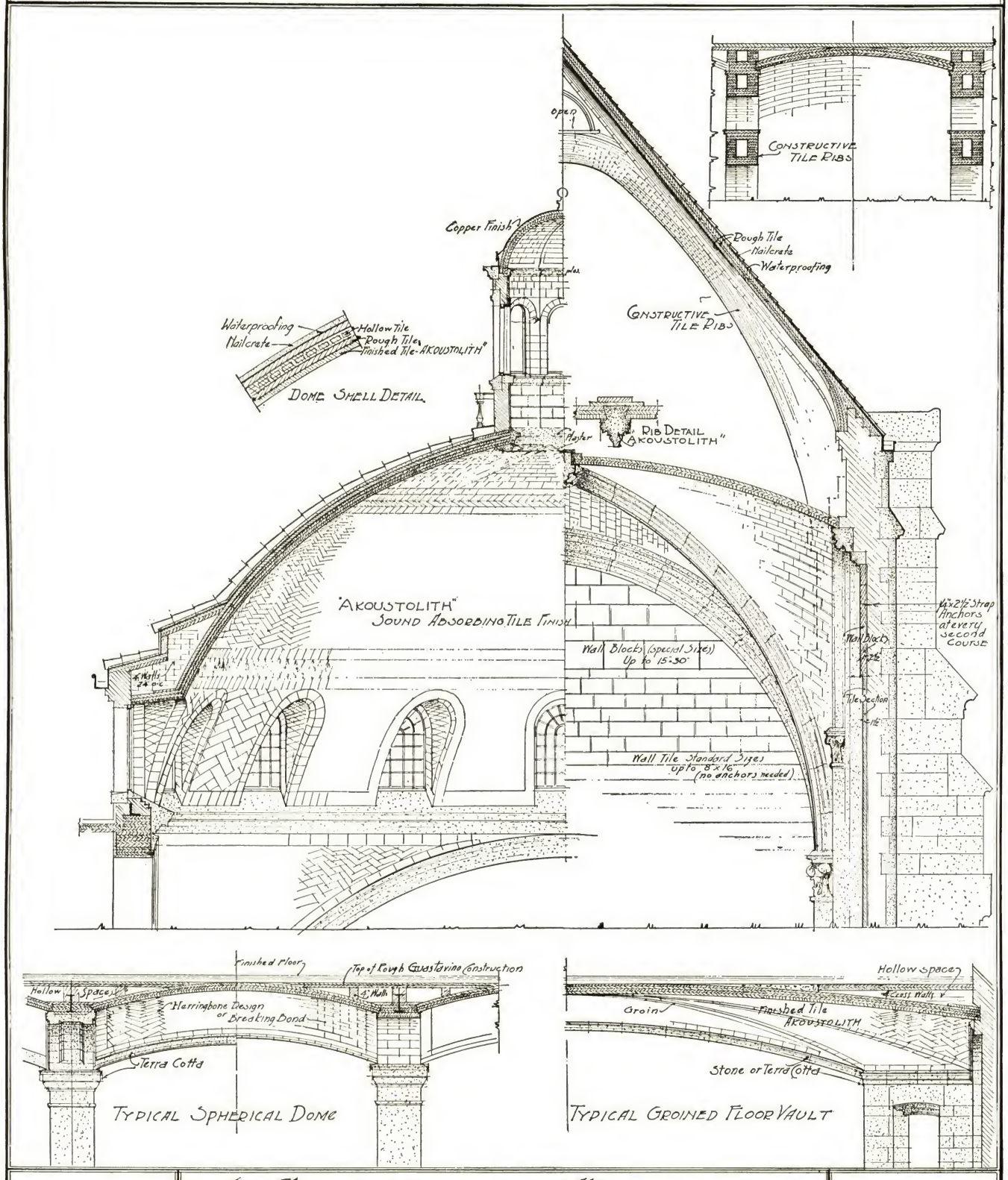
Installation

Guastavino Timbrel Arch Construction is always installed by our own mechanics, specially trained in this work.

A FEW OUTSTANDING INSTALLATIONS

Cathedral of St. John the Divine, New York, N. Y., Cram & Ferguson, Architects.
Grace Cathedral, San Francisco, Cal., Lewis P. Hobart, Architect; Cram & Ferguson, Consulting Architects.
St. Albans Cathedral, Washington, D. C., Frohman, Robb & Little, Architects.
Nebraska State Capitol, Lincoln, Neb., Bertram Grosvenor Goodhue and Bertram Grosvenor Goodhue Assoc., Architects.
Riverside Church, New York, N. Y., Pelton, Allen & Collens, Architects.
Chicago University Chapel, Chicago, Ill., Bertram Grosvenor Goodhue Assoc., Architects.
National Shrine of the Immaculate Conception, Washington, D. C., Maginnis & Walsh, Architects.
Princeton University Chapel, Princeton, N. J., Cram & Ferguson, Architects.
Duke Chapel, Durham, N. C., Horace Trumbauer, Architect.
Benjamin Franklin Memorial and Franklin Institute Museum, Philadelphia, Pa., John T. Windrim, Architect.
East Liberty Presbyterian Church, Pittsburgh, Pa., Cram & Ferguson, Architects.
Heinz Memorial Chapel, University of Pittsburgh, Pittsburgh, Pa., Charles Z. Klauder, Architect.
Swimming Pool, Brooklyn College of the City of New York, Brooklyn, N. Y., Randolph Evans, Architect; Corbett, Harrison & MacMurray, Associated Architects.
Express Highway, W. 79th St. Grade Crossing Elimination, New York, N. Y., New York Central R. R., Engineers; Madigan-Hyland, Consulting Engineers.
Cathedral of Learning, Pittsburgh, Pa., Charles Z. Klauder, Architect.
Cloister Museum for the Metropolitan Art Museum, New York, N. Y., Allen & Collens, Architects.

GUASTAVINO VAULTING DETAILS



SCALE	R. Guastavino Company	DETAIL SHEET
	New York — Factory Woburn Mass — Boston	

AKOUSTOLITH

Sound-absorbing Artificial Stone in Tile or Ashlar Form

Description

AKOUSTOLITH is an artificial stone with a very high acoustical value. Tests by the National Bureau of Standards give a coefficient of absorption for AKOUSTOLITH up to 90% at 512 cycles (C_4). The sound-absorbing efficiency varies according to thickness and grade.

AKOUSTOLITH is genuine masonry, non-combustible and non-smoke producing. It will not warp and water has no effect on its structure. It can be easily cleaned by vacuum or by washing.

Uses

Owing to its light weight and facility of manufacture AKOUSTOLITH is easily adapted to plain or elaborate architectural forms. It is used in tile form on walls, ceilings, arches, vaults and other architectural forms of a constructive nature. In ashlar sizes it has been used considerably by architects on sidewalls in lieu of stone work and has been successful in meeting their requirements.

Textures and Colors

It has a fine granular surface and is made in textures similar to that of natural stones or as desired. It is made in colors ranging from gray white through various shades of buff, brown or other colors of the natural stone.

Sizes and Weight

AKOUSTOLITH is manufactured in any size from the smaller tile dimensions, 3x6 in.; 4x8 in.; 5x10 in.; 6x12 in. and 8x16 in. usually about 1 in. thick and for this thickness weighs about 4 lbs. per sq. ft. This light weight permits AKOUSTOLITH to be used in places where heavier material would be impracticable—for instance, ceiling work.

For wall ashlar, AKOUSTOLITH can be made in sizes up to 30x60 in. from 1½ to 2½ in. thick depending on size. It can also be moulded or cast in the usual architectural shapes. The distance from the backing to the finish face of AKOUSTOLITH will vary from 1⅜ in. for the smaller tile sizes to 3 in. for the larger ashlar sizes.

Installation

AKOUSTOLITH Tile used on ceilings has primarily been installed in connection with GUASTAVINO Timbrel Arch Construction, using it as a soffit course and backing up with two or more layers of rough tile. It is also installed by applying it directly to the soffit of concrete floor slabs or to wire lath and portland cement plaster ceilings.

For sidewall installations it can be cemented directly to masonry surfaces without scratch coat, if the surface is reasonably true.

SPECIFICATIONS

Ceiling Work

(a) As Part of Guastavino Timbrel Arch Construction—
Where indicated on drawings, or as hereinafter specified, the ceilings shall be constructed of Timbrel Tile arches by R. GUASTAVINO COMPANY, New York and Boston, with the soffit of the arch faced with (give size of tile) AKOUSTOLITH sound-absorbing stone tile. Tile to be laid in pattern shown.

Arch construction in addition to the soffit course of AKOUSTOLITH Tile shall consist of not less than two layers of good, hard burned, rough, semi-porous terra cotta tile, ranging from 1x6x12 ins. to 24 ins. in length. Tile shall be laid in 1 to 2½ mix portland cement mortar and reinforced with steel rods or bars between the courses or between the ends of the tile of the same course as may be necessary.

Centering—The contractor for the above vaulting shall provide and erect all centers required for the installation of his work. Centering shall remain in place until the mortar is set and hard, after which he shall remove all his centering from the building.

Vault Supports—The general contractor shall leave out recesses, or build masonry corbels or brackets in walls as well as any steel necessary for the support of the tile vaulting as shown on the working drawings of the architect and tile vault contractor.

(b) For Installing "Akoustolith" Tile Against Soffit of Concrete Floor Slabs—
Where indicated on the drawings, or as hereinafter specified, the ceiling or soffit of concrete floor slabs and beams shall be faced with AKOUSTOLITH sound-absorbing stone tile as manufactured by R. GUASTAVINO COMPANY, New York and Boston. Tile shall be (give size), laid in approved portland cement mortar in patterns as shown, directly against the cement slab and beams which have been properly roughened and cleaned by others. Joints ¼ in., colored as directed with approved mortar colors.

(c) For Installing "Akoustolith" Tile on Metal Lath Ceilings—

Note for Metal Lath and Furring Specifications: Where AKOUSTOLITH is specified or indicated on ceilings, beams, etc., the metal lath foundation should be formed of 1 in. standard channels set 12 in. o.c., covered with 3.4 lb. metal lath.

Note for Plastering Specifications: Wherever AKOUSTOLITH Tile is required for finished ceilings the metal lath shall be given two coats of portland cement mortar, the last to be scratched.

Wall Work

Where indicated in drawings or hereinafter specified the sidewalls shall be finished with AKOUSTOLITH sound-absorbing stone manufactured by R. GUASTAVINO COMPANY, New York and Boston. This shall be in ashlar (give sizes) of color and texture as selected by the architect, and laid up in pattern as shown on the drawing with a ¼-in. joint. AKOUSTOLITH ashlar shall be cemented directly against the masonry wall with portland cement mortar and anchored if necessary.

TYPICAL INSTALLATIONS OF AKOUSTOLITH

Temple Emanu-El, New York, N. Y., Robert D. Kohn, Charles Butler and Clarence S. Stein, Architects; Mayers, Murray & Phillip, Associate Architects.

Department of Commerce Building, Washington, D. C., York & Sawyer, Architects.

U. S. Post Office, Custom House and Courthouse, Duluth, Minn., Supervising Architect, Treasury Department.

Oklahoma City Post Office, Oklahoma City, Okla., Supervising Architect, Treasury Department.

Girard College Chapel, Philadelphia, Pa., Thomas Martin & Kirkpatrick, Architects.

Church of St. Andrew and St. Paul, Montreal, Canada, H. L. Fetherstonhaugh, Architect.

Federal Reserve Bank, Boston, Mass., R. Clipston Sturgis, Architect.

Federal Reserve Bank, New York, N. Y., York & Sawyer, Architects.

Federal Reserve Bank, Richmond, Va., Sill, Buckler & Fenhagen, Architects.

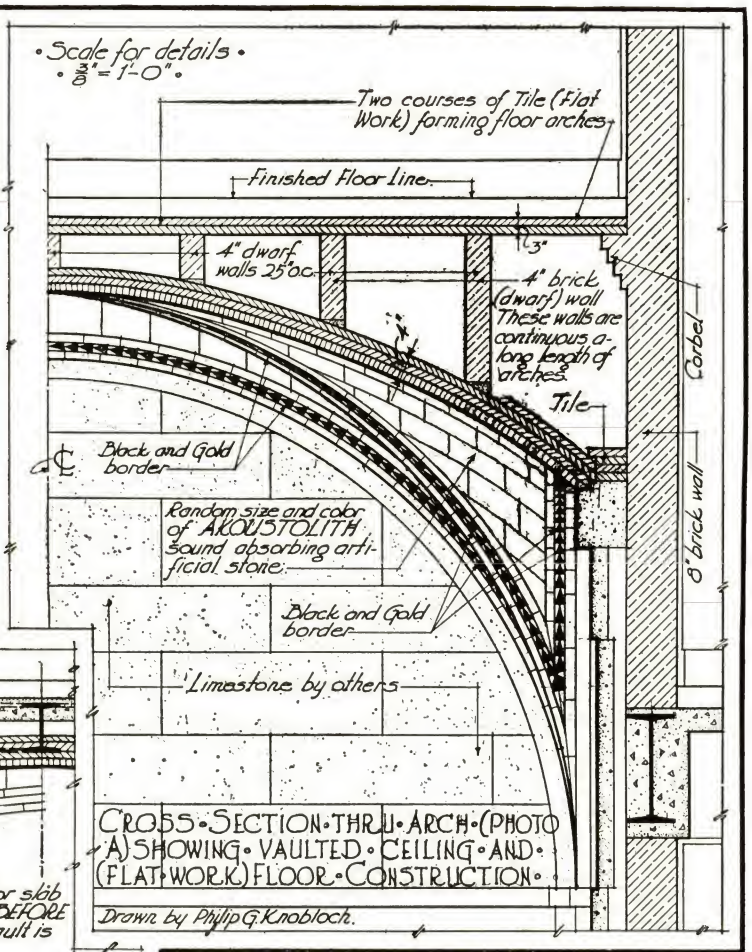
Federal Reserve Bank, Louisville, Ky., D. X. Murphy & Bro., Architects.

Federal Reserve Bank, Baltimore, Md., Parker, Thomas & Rice, Architects.

Federal Reserve Bank, Philadelphia, Pa., Bunting & Shrigley, Architects.

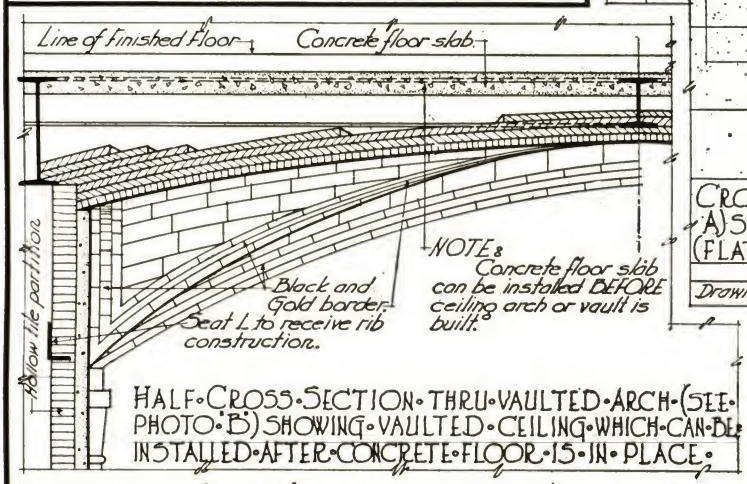
The Archives Building, Washington, D. C., John Russell Pope, Architect.

VESTIBULE ENTRANCE TO SALMON TOWER
YORK & SAWYER ARCH'TS. WEST 42ND STREET N.Y.C.

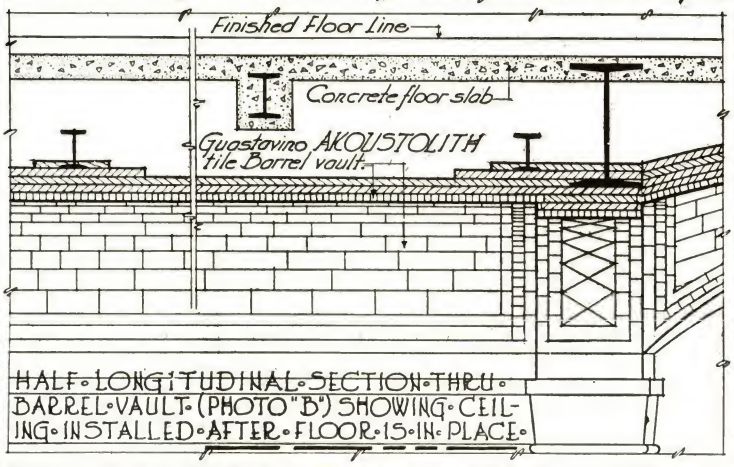


CROSS-SECTION-THRU-ARCH-(PHOTO A) SHOWING-VAULTED-CEILING-AND-(FLAT-WORK) FLOOR-CONSTRUCTION.

Drawn by Philip G. Knobloch.



HALF-CROSS-SECTION-THRU-VAULTED-ARCH-(SEE-PHOTO-"B") SHOWING-VAULTED-CEILING-WHICH-CAN-BE-INSTALLED-AFTER-CONCRETE-FLOOR-IS-IN-PLACE.



HALF-LONGITUDINAL-SECTION-THRU-BARREL-VAULT-(PHOTO "B") SHOWING-CEILING-INSTALLED-AFTER-FLOOR-IS-IN-PLACE.

CORRIDOR ENTRANCE TO SALMON TOWER
YORK & SAWYER ARCH'TS. WEST 42ND STREET N.Y.C.

R·Guastavino Company

GUASTAVINO ACOUSTICAL PLASTERS

AKOUSTOLITH SOUND-ABSORBING PLASTER

General Description

AKOUSTOLITH Sound-absorbing Plaster is a light weight masonry material, troweled on as a finish coat over the ordinary base coats. As the binder of AKOUSTOLITH is portland cement, it is especially desirable for ceilings or walls exposed to dampness, as in swimming pools. Only regular plasterer's tools are required for its application. AKOUSTOLITH is now, and always has been, a fireproof material. The surface is hard and it may easily be cleaned by washing. AKOUSTOLITH Plaster *requires no floating, stippling or other mechanical processes to secure its efficiency.* More than fifteen years successful use in almost every type of building has proved its architectural correctness and acoustical efficiency.

Appearance

The texture of AKOUSTOLITH resembles a sand finish plaster. Its natural color is very light gray, almost white. It may be colored to almost any shade by the use of mortar colors. AKOUSTOLITH may be painted by using special thin acoustical paint.

Covering Capacity

AKOUSTOLITH Plaster ½ in. thick will cover from 100-110 yards per ton. At ¼ in. thickness it will cover 165-175 yards per ton.

Servicing

It is our practice to service each job in the United States with a representative at the starting of the installation. This is usually done at no extra charge.

Notes for Specification Writer

AKOUSTOLITH may be applied over lime, gypsum* or portland cement base coats. These must be applied in full accordance with the plaster manufacturer's specifications and the surface to receive AKOUSTOLITH must be thoroughly cross scored. If AKOUSTOLITH is to be used in any place where there is continual dampness, base coats must be portland cement applied in accordance with Portland Cement Association specifications.

Specification

Where acoustical treatment is shown on the plans and in the following spaces ..... it shall be AKOUSTOLITH Plaster as manufactured by R. GUASTAVINO COMPANY of New York and Boston, applied (specify thickness ½ or ¼ in.) in strict conformity with the manufacturer's written directions.

*The gypsum base coat or coats to be applied in accordance with manufacturer's directions, but in no case shall there be more than two parts sand to one part gypsum by weight.

PLASTACOUSTIC SOUND-ABSORBING PLASTER

General Description

PLASTACOUSTIC is a granular, light weight masonry sound-absorbing plaster, easily applied by trowel. It has a gypsum base. It resembles sand finish plaster and is furnished in either its natural grayish white color or in several other colors.

Application

PLASTACOUSTIC is applied to its desired thickness in ¼-in. coats. It goes on so easily that the average plasterer can apply 8 to 10 yards per hour (½ in. thick on a gypsum base coat). Only regular plasterer's tools are required.

Covering Capacity

PLASTACOUSTIC covers from 110 to 120 or more yards per ton (½ in. thick on a gypsum base). This large covering capacity combined with its low price brings the cost down to a very low figure.

Specification

Where acoustic treatment is used, it shall be PLASTACOUSTIC Sound-absorbing Plaster manufactured by R. GUASTAVINO COMPANY of New York and Boston. It shall be applied to a total thickness of ½ in. over a well scored gypsum base coat *in accordance with the manufacturer's written directions.

*The gypsum base coat or coats to be applied in accordance with manufacturer's directions, but in no case shall there be more than two parts sand to one part gypsum by weight.

CASTACOUSTIC SOUND-ABSORBING CASTING PLASTER

Purpose

CASTACOUSTIC is a sound-absorbing Plaster designed expressly for ornamental or coffered surfaces where acoustical treatment is desired, and where a surface having a period design or architectural character is required. (CASTACOUSTIC is not suitable for trowel application.) Almost any type of ornamental work which can be cast in plaster moulds can be formed in CASTACOUSTIC Plaster. Sharp undercut should be avoided.

Appearance

CASTACOUSTIC has a fine granular appearance and on high ceilings is scarcely distinguishable from ordinary plaster. In its natural color CASTACOUSTIC is a very light gray, almost white. It can be colored to any shade by the use of mortar colors added by the plasterer.

Structure

When mixed with the proper quantity of water, the structure of CASTACOUSTIC Plaster is open and continuously porous from the finish face completely through its entire depth. This porous structure provides the highest acoustical efficiency.

Covering Capacity

The covering capacity of CASTACOUSTIC Plaster is as follows: applied 1 in. thick one ton will cover approximately 45 yds.

Specification

The following rooms shall have all ornamental castings, as indicated on drawings, cast in CASTACOUSTIC Plaster as manufactured by R. GUASTAVINO COMPANY of New York and Boston. CASTACOUSTIC Plaster shall be mixed in strict accordance with the manufacturer's directions. The plasterer shall submit a sample casting for the approval of the architect. All cast work shall be set accurately and straight. Reinforcing and backing shall be used as would be required for the best type of ordinary ornamental plaster work.

Acoustical Material for Less Noise and Better Hearing

CELOTEX ACOUSTICAL PRODUCTS

THE CELOTEX CORPORATION

Chicago · Illinois

THE CELOTEX CORPORATION

919 NORTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

ACOUSTICAL DEPARTMENT

Member of

BACKGROUND — The Celotex Corporation is the world's largest manufacturer and distributor of acoustical materials. This immense practical field experience in thousands of installations in all types of buildings correlated with the activities of an able Research Engineering Department keeps Celotex Acoustical Service up-to-date and valuable to architects.

PRODUCTS—The Celotex Corporation offers not one but a choice of several distinct types of acoustical material of widely varying characteristics in more than 200 individual items as to size and finish. This selection has been made available in order to provide architects with latitude in esthetic expression as well as in absorption efficiencies and methods of application.

They include and comply with every requirement of decorative effect, weight, texture, light reflection, fire-law requirements, maintenance and other problems.

SALES ENGINEERING AND APPLICATION SERVICE —In every part of the United States there is an exclusive distributor for Celotex Acoustical Products.

These independently owned and operated distributors provide readily accessible and prompt service to architects in the form of acoustical analyses and recommendations with assistance always available from the Headquarters and Field staff of the Celotex Acoustical Department. Competent, dependable information regarding all Celotex Acoustical Products, their proper application and estimates of cost, etc., is promptly supplied. By this policy architects are assured of definite and continuing responsibility of satisfactory results.

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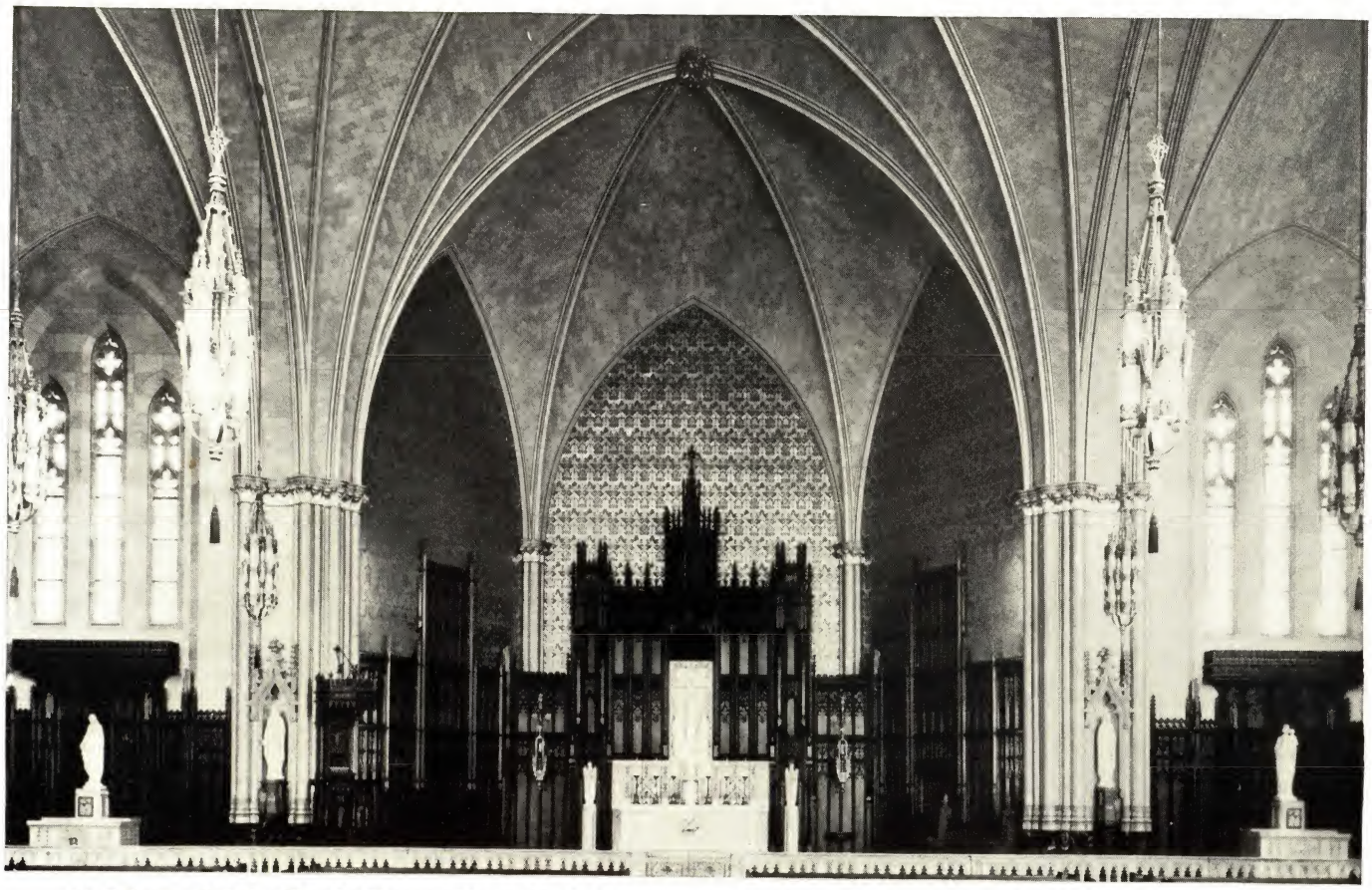
ACOUSTI-CELOTEX
Bar, Waldorf Astoria Hotel, New York City

ACOUSTI-CELOTEX
Washburn Crosby Company, Chicago, Ill.



St. Sabina's Catholic Church, Chicago, Illinois, used Calicel on vaulted ceiling. Architect: Joseph J. McCarthy, Chicago, Ill.

THE ACOUSTICAL PROBLEM

NOISE ABSORPTION—Celotex, more than any other manufacturer, has taken the mystery out of Acoustics. Acoustical correction is a rational engineering science. Celotex acoustical materials are finished product units as they leave the factory and will uniformly provide absorption in accordance with their advertised coeficients.

Noise has been defined as unwanted sound. For the elimination of unwanted sound, Celotex Acoustical Products admirably serve, whether the problem be a cathedral, a hospital, a broadcasting studio, an office, or a restaurant.

Obviously from an acoustical engineering standpoint, there are wide differences between problems in auditoria. The absorption characteristics of the acoustical material, the area to be installed and the location of the material deserve consideration as well as the specific use to which the room is to be put. For example, if two identical auditoria are to be built, one for a Roman Catholic congregation and the other for Christian Scientists, the acoustical recommendations should not be the same, because of the difference in the nature of the services.

In offices, hospitals, and restaurants where acoustical treatment is to be used for sound quieting, the competent acoustical engineer will determine at what point the law of diminishing returns makes further expenditure economically unsound.

In the selection of acoustical material to be used, 25 years of experience proves that many other factors besides absorption efficiency are worthy of the architect's consideration. These include:

Maintenance and Light Reflection—The cost and effect on absorption of conventional methods for renovating wall and ceiling surfaces.

Moisture Resistance—The effect on the acoustical material of continual high humidities as in swimming pools.

Conductivity—Important where the acoustical material is applied on the underside of a roof deck.

Rodent and Vermin Resistance—Particularly important in hospitals and restaurant kitchens, etc.

Resistance to Impact and Abrasion—Important in gymnasia and wherever acoustical material is applied on traffic-bearing wall areas.

COMMON USES—The list of places where acoustical material is used is practically limitless. The following is a partial check list of installations where it is most commonly used:

Business Offices
Banks
Educational Institutions
Hospitals
Theatres
Hotels
Churches
Courtrooms
Restaurants
Libraries
Transportation Terminals
Department Stores
Radio Broadcasting Studios

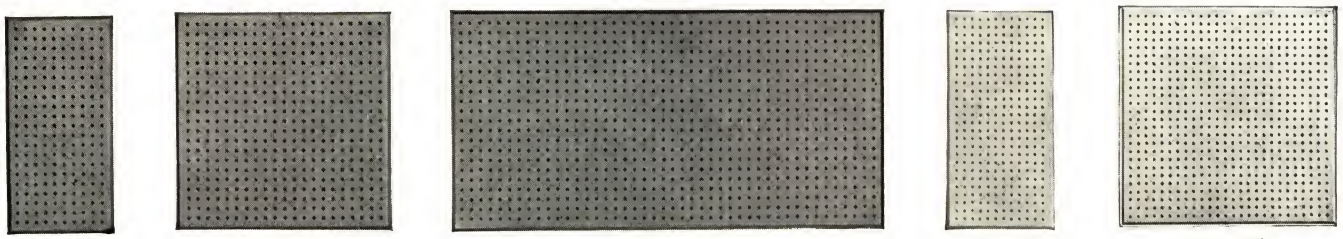
ACOUSTI-CELOTEX

DESCRIPTION—Acousti-Celotex is a light, rigid acoustical tile combining extraordinary sound absorbing efficiency with a durable, smooth finished surface. The face of Acousti-Celotex is perforated to within ⅛ inch of the back of the tile. These perforations (patented) of definite diameter, depth, and spacing act as channels which allow the sound waves ready access to the porous interior of the tile where sound absorption takes place. There are two types of Acousti-Celotex—C—Series (Acousti-Celotex Cane Tile) and M—Series (Acousti-Celotex Mineral Tile), each available in several thicknesses.

PAINTABILITY—The perforations in Acousti-Celotex permit repeated painting with any kind of paint without affecting the sound absorbing efficiency. Paint does not seal the openings to the tubular channels through which the sound waves enter the porous block and are absorbed. This important feature is especially valuable in installations in offices, hospitals, schools, restaurants, etc., where renewable light reflection is of paramount importance.

MOISTURE RESISTANCE—Integrally waterproofed during manufacture, Acousti-Celotex is highly moisture resistant. It is *not* recommended for use in rooms where continual excessive humidity exists.

RODENT, VERMIN RESISTANCE—Acousti-Celotex contains no food for rats, mice and other rodents or vermin.



6" x 12" 12" x 12" 12" x 24" 6" x 12" 12" x 12"

Cane Tile Mineral Tile

CANE TILE C—SERIES

Manufactured from a base of bagasse (the long, tough fibers of sugar cane), Acousti-Celotex Cane Tile has a thin face of high density material laminated to a back of highly absorbent fiber structure. It is perforated with 441 holes per square foot. The patented Ferox Process, used on all Celotex Cane Products, makes the material proof against termites and dry rot.

SIZES—Cane Tile comes in standard 6 x 12, 12 x 12, and 12 x 24 inch sizes. Special sizes available at additional cost. For specific data see table below.

FINISHES—Acousti-Celotex Cane Tile is made in two finishes—RI (Rolled Ivory) and VHR (Varnished and Hot Rolled). RI is a smooth, light-colored surface affording good light reflection and an attractive appearance. Paint may be applied over RI without sizing.

VHR, somewhat harder and smoother than RI is a dark brown color and is especially suited as a base for high quality paint finish.

Optional paint finishes over both are available.

For light reflection qualities of these two basic finishes and variations thereof, see table below.

CONDUCTIVITY—Acousti-Celotex Cane Tile has a thermal value of 0.33 B.t.u. per hour, per square foot, per degree F., per inch thickness.

MINERAL TILE M—SERIES

DESCRIPTION—Made of mineral aggregate pressed with a binder to form a rigid incombustible tile, Acousti-Celotex Mineral Tile is perforated with 676 holes per square foot. It is universally rated as incombustible.

SIZES—Mineral Tile is manufactured in standard 6 x 12 and 12 x 12 inch sizes. Special sizes available at additional cost. For specific data see table below.

FINISHES—Mineral Tile comes in two standard finishes (1) WA (White Asbestos), a smooth, light-reflecting surface, and (2) with flat paint or enamel.

CONDUCTIVITY—Acousti-Celotex Mineral Tile has a thermal value of 0.35 B.t.u. per hour, per square foot, per degree F., per inch thickness.

TYPES OF ACOUSTI-CELOTEX

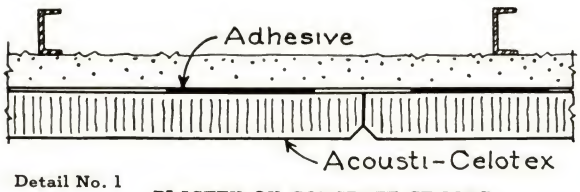
Type		Thickness (Inches)	Diam. of Perforations (Inches)	Weight Per Sq. Ft. (Pounds)
CANE TILE - - -	C1	½	3/16	0.84
	C2	5/8	3/16	0.97
	C3	13/16	3/16	1.03
	C4	1¼	3/16	1.50
	C5	13/16	¼	0.95
	C6	1¼	¼	1.37
MINERAL TILE	M1	5/8	5/32	1.43
	M2	1	5/32	2.12

LIGHT REFLECTION FACTORS*

CANE TILE Finish	Diameter of Perforations 1/4"	3/16"
Natural, Sanded	.29	.31
RI (Rolled Ivory)	.48	.56
RI plus one coat flat white	.71	.74
RI plus one coat cream white		.72
VHR (Varnish Hot Rolled) plus 2 coats white	.71	.76
VHR plus 2 coats cream white		.74
VHR plus white enamel	.69	.74
VHR plus cream white enamel		.73

By authority of Curtis Lighting, Inc.

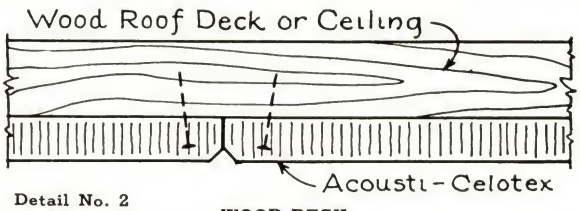
INSTALLATION DETAILS



Detail No. 1

PLASTER OR CONCRETE CEILING

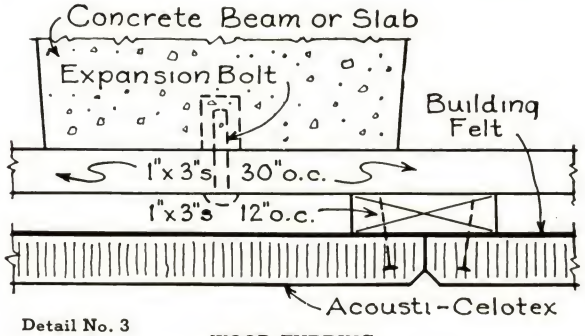
On plaster ceilings Acousti-Celotex is usually cemented (using an approved adhesive) and nailed directly to the plaster. If desired, Acousti-Celotex may be applied with a heavy bodied adhesive alone to plaster or flat concrete surfaces.



Detail No. 2

WOOD DECK

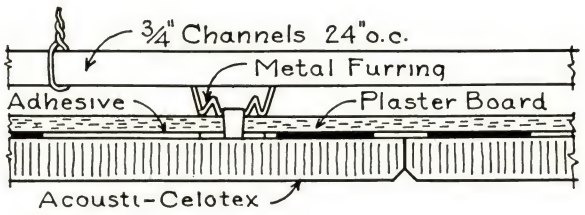
On ceilings of wood, as churches or gymnasiums having an exposed wood roof deck, Acousti-Celotex is nailed directly to deck.



Detail No. 3

WOOD FURRING

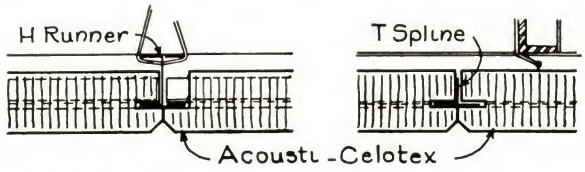
On concrete surfaces or surfaces where it is desired to fur down. 1 x 3-inch wood furring strips may be attached to the concrete with expansion plugs, and Acousti-Celotex is nailed to the furring strips. Ordinarily, a first course of strips 30 inches o.c. is used, to which is nailed a second course 12 inch o.c. to receive 12 x 12-inch tiles. A backing of building felt is used directly behind Acousti-Celotex to prevent "breathing" between joints.



Detail No. 5

PLASTER BOARD CEILING

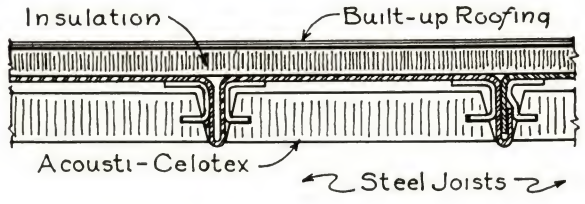
Where a suspended ceiling of lighter and cheaper construction than metal lath and plaster is desired. Acousti-Celotex may be directly fastened to gypsum board held by special suspended plaster board systems. The metal furring should not be spaced greater than 16 inches O. C.



Detail No. 6

METAL SUSPENSION—CANE TILE

Where it is desired to use the Acousti-Celotex as the suspended ceiling by itself, the Celotex metal suspension system may be used, as shown above. Details of this type of construction are available on request.



Detail No. 7

STEEL DECK

Acousti-Celotex Cane Fibre Tile may also be used in combination with steel roof decks to give a combined acoustical ceiling and steel roof deck having high heat insulating qualities. The Acousti-Celotex C-Series has the same heat insulating value as an equal thickness of Celotex. The Acousti-Celotex is cut to fit the steel deck, and fabricated before erection.

SOUND ABSORPTION COEFFICIENTS

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Material	Thickness	Coefficients 128	256	512	1024	2048	Noise Red.Coef.	Surface
ACOUSTI-CELOTEX CANE TILE								
Type C1*	½"	.24	.27	.48	.57	.59	.50	Painted by mfr. with oil-base paint. Perforated 441 holes per sq. ft. 3/16" diam. 3/8" deep.
Type C1†	½"	.36	.58	.51	.52	.62	.55	Same as above.
Type C2*	5/8"	.19	.20	.69	.85	.65	.60	Painted same as above. Perforated same as above ½" deep.
Type C2†	5/8"	.40	.59	.68	.81	.66	.70	Same as above.
Type C3*	13/16"	.25	.27	.76	.88	.60	.65	Painted same as above. Perforated same as above 11/16" deep.
Type C4*	1¼"	.37	.43	.98	.79	.57	.70	Painted same as above. Perforated same as above 1-1/16" deep.
Type C5*	13/16"	.14	.35	.63	.83	.90	.70	Unpainted. Perforated 441 holes per sq. ft. ¼" diam. 5/8" deep.
Type C6*	1¼"	.19	.41	.91	.92	.92	.80	Unpainted. Perforated same as above 1" deep.
ACOUSTI-CELOTEX MINERAL TILE								
Type M1*	5/8	.17	.29	.58	.82	.82	.65	Unpainted. Perforated 676 holes per sq. ft. 5/32" diam. ½" deep.
Type M1*	5/8"	.14	.24	.58	.93	.83	.65	Painted with oil-base paint. Perforated same as above.
Type M2*	1"	.15	.34	.88	.95	.77	.75	Same as above.

**Cemented to plaster board, considered equivalent to cementing to plaster or concrete ceiling.*

†Nailed to 1 x 2 in. wood furring 12 in. o.c. unless otherwise indicated.

The noise reduction coefficient is the average of the coefficients at frequencies from 256 to 2048 cycles inclusive, given to the nearest 5%. This average coefficient is recommended for use in comparing materials for noise quieting purposes as in offices, hospitals, banks, corridors, etc.

For auditorium treatment, attention should be directed to the coefficients at 512 cycles.

CALICEL PRODUCTS

New York Central Passenger Station, Syracuse, N. Y.
Entire ceiling and frieze of Calicel Acoustical Castone

DESCRIPTION — Calicel Acoustical Products — Calicel, Calistone, and Calicel Acoustical Castone—possess the characteristics that have made stone the traditional material for finishing monumental interiors, combining with these characteristics the softening hush of a cushion—sound absorption.

Calicel, basically, is a highly expanded stone. A cellular mineral, it is formed at temperatures in excess of 2,000 degrees F., the molten mass being expanded 10 to 40 volumes during cooling, resulting in a hard porous stone, somewhat comparable in structure to a petrified sponge. Subsequent refining produces finished Calicel, which serves as an aggregate for all Calicel Acoustical Materials—Calicel Tile, Calistone, and Calicel Acoustical Castone.

Calicel aggregate is graded for size and color, making possible a wide choice of natural colors and textures in the finished product.

In Calicel Tile, the aggregate is thoroughly mixed with a mineral binder, then moulded with hydraulic presses, after which it is kiln cured.

Calistone is made of selected Calicel aggregates mixed with certain Portland cements, moulded with hydraulic presses and cured in kilns under steam pressure. The resultant stone has the appearance as well as abrasive and wearing strength of natural stone, yet possesses high acoustical value.

In differentiating between Calicel and Calistone, remember the superior abrasive and wearing strength of Calistone and its superior moisture-resistant qualities, due to the Portland cement binder, which make it ideal for such conditions as swimming pools.

Calicel Acoustical Castone is made, under arrangements with Celotex, by Jacobson and Company, Inc., New York City, nationally known fabricators of cast plaster and interior stone ornaments, and answers the need for acoustical treatment in buildings and rooms demanding rich ornamentation. It is ideal for the formation of intricate

Standard Type

Italian Type

Tapestry Type

CALICEL PRODUCTS — CONTINUED

coffers and elaborate friezes, panels, and mouldings. The detail is cast with unusual sharpness.

SIZE—Calicel Tile are made ¾ and 1 in. thick and in standard sizes, 6 x 12 in., 12 x 12 in., and 8 x 16 in. Special sizes can also be provided.

FINISHES—

Calicel Tile—The natural finish is a light buff color of fine texture. This is the standard type and it is available, where higher light reflection is desired, with a factory-applied lacquer finish.

Calicel—Italian Type—This is made of the same fine texture as Standard Type Calicel Tile but contains a sprinkling of dark colored Calicel particles, effective for contrast.

Calicel—Tapestry Type—This resembles the Italian Type in color combination but the surface is coarser in texture.

Calistone—In Calistone the limitations are no greater than that of natural stone—texture and color can be matched.

APPLICATION—Calicel and Calistone may be applied either by cementing with approved acoustical tile adhesives against plaster or masonry or may be mechanically attached by means of a metal suspension system. Where Calistone is used to simulate natural stone, it may be erected in the same manner as stone or marble.

In certain types of construction of a monumental nature, it is desirable in the interests of permanence to install structural masonry arch or domed ceilings. Calistone, in varying thicknesses and sizes, when used in conjunction with terra cotta rough tile, makes the ideal construction. The thickness of the Calistone can be varied to provide the amount of absorption required for proper acoustical correction.

SOUND ABSORPTION COEFFICIENTS

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Material Thickness	Coefficients					Noise Red. Coef.
	128	256	512	1024	2048	
UNPAINTED						
*Standard, ¾"	.16	.19	.57	.95	.71	.60
*Standard, 1"	.20	.29	.76	.97	.79	.70
*Tapestry, ¾"	.13	.20	.64	.89	.65	.60
*Tapestry, 1"	.18	.32	.83	.82	.67	.65
†Calistone 1"	.16	.28	.60	.89	.66	.60
†Calistone 2"	.36	.58	.77	.69	.63	.65
PAINTED BY MFR., OIL BASE PAINT						
*Standard, ¾"	.15	.22	.58	.96	.76	.65
*Standard, 1"	.20	.27	.76	.99	.81	.70

**Cemented to plaster board, considered equivalent to cementing to plaster or concrete ceiling. †Laid directly on laboratory floor.*

*The noise reduction coefficient is the average of the coefficients at frequencies from 256 to 2048 cycles inclusive, given to the nearest 5%. This average coefficient is recommended for use in comparing materials for noise quieting purposes as in offices, hospitals, banks, corridors, etc.

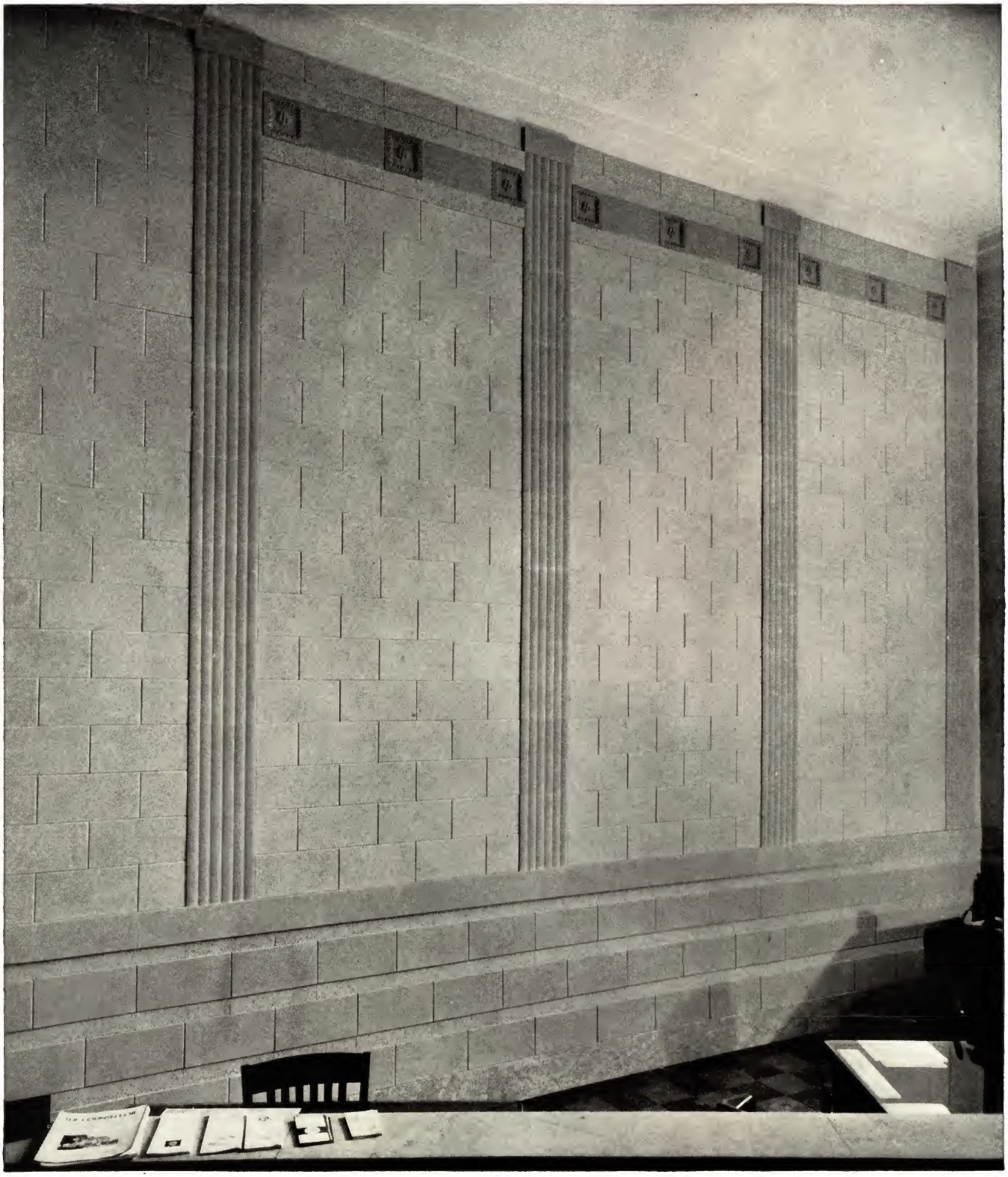
For auditorium treatment, the coefficients at 512 cycles apply.

Calicel Ceiling, Netherland Plaza Hotel, Cincinnati, Ohio

Calicel Castone, Pennsylvania R.R. Station, Newark, N. J.

Rear wall of Court House, Aberdeen, S. D., showing Calicel Acoustical Castone

CALICEL PRODUCTS



In this wall treatment of a modernized bank interior, Calicel Acoustical Products have been used in interesting fashion to accomplish interior finish, decoration, and acoustical correction.

In the dado above the marble base there are alternate courses of Calistone with recessed Calicel, Italian Type, between. Moulded Calicel units form the fluted pilasters, while in the space between the pilasters Calicel Tile of the Standard Type have been laid up. Calicel Acoustical Castone adds an interesting ornamental note, the three units in each wall panel being set in a frieze of moulded Calicel.

VIBRAFRAM

(Formerly Heerwagen Tile)

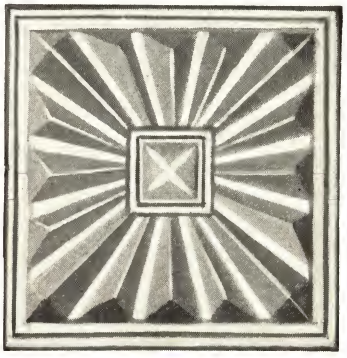
DESCRIPTION—A radical departure from conventional porous acoustical materials, Vibrafram depends for its sound-absorbing qualities on diaphragmatic action of the individual units. It is a tile 13 inches square, 1½ to 3 inches deep, and is made of fireproofed felt, sized to form plain or ornamented hollow tile shapes, yet soft enough to retain a vibratory quality. The tile weigh only 3 ounces per square foot.

ADVANTAGES—Many conventional acoustical absorbents adequately absorb high-pitched sounds but provide inadequate absorption for sounds in the lower frequencies. Due to this characteristic in some acoustically treated rooms, there is complaint of a "dead" condition, while in cases of sound picture theatres the same characteristic accounts for a "boom" in the low frequency range, disturbing to a comfortable audition. Because Vibrafram develops its greatest absorption at low frequencies, it has found wide acceptance in the sound picture theatre field, particularly in Canada where Dominion Sound Equipments, Ltd., distributors of Western Electric and RCA Sound Systems have observed its unique effectiveness in scores of theatres.

APPLICATION—Surfaces to which Vibrafram are to be applied, such as concrete, plaster, or wallboard, should be firm, true, and cleaned of calcimine, whitewash or loose paint. Surfaces to be treated are scored and chalk-lined both ways in 13-inch squares.

C-5

E-1



C-6

Waterproof adhesive is then applied to all half-inch margins of the tile, which are then applied and pressed firmly into position.

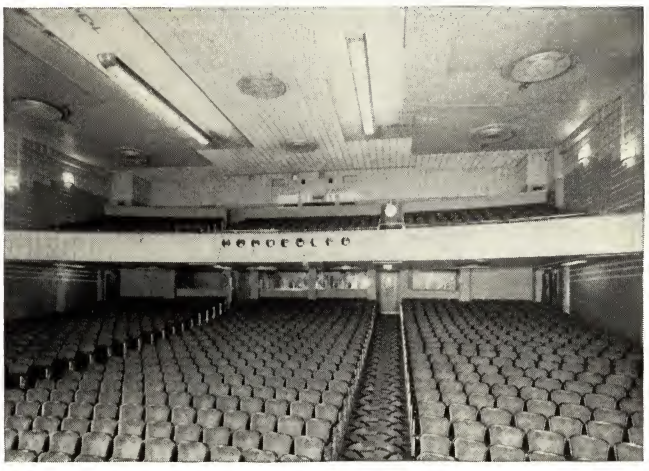
When Vibrafram is applied to brick walls, cement, or very rough and cracked plaster surfaces which provide an unsatisfactory base for adhesive alone, then the use of furring trellis is recommended. Information concerning this method will be furnished upon request.

DECORATION — Vibrafram is furnished in three standard tile designs, illustrated on this page. Special individual designs may be had at slightly increased cost. Naturally light cream in color, Vibrafram may be stenciled or otherwise decorated without appreciable loss of efficiency. The manufacturer should be consulted regarding paints to be used. A variety of interesting decorative effects can be worked out with study and ingenuity, and in theatre work particularly the unique acoustical results justify the effort required to employ Vibrafram harmoniously in the design.

NOTE: *Vibrafram is not recommended for application to surfaces subject to abrasion or body contact, nor should it be used in rooms where conditions of high humidity exist, as in swimming pools, etc.*

***Below*—Empire Theatre, Quebec, Canada**

***Below*—Casino Theatre, Toronto, Canada**



ABSORBEX

Absorbex is a decorative sound-absorbing material available in conventional sized tile or larger units. Its texture is unique, and because of its fire-resisting quality and structural strength it offers an interesting solution for suspended ceiling construction.

DESCRIPTION—It is a cement-timber product, made by shredding timber into long tough fibers and binding them together with an emulsion of high temperature cement. This mass is then formed between rolls and steel belts at about 500 degrees F. into slabs, uniform in thickness, containing millions of minute air cells, affording high insulation, great structural strength, fire-resistance, and superior acoustical value.

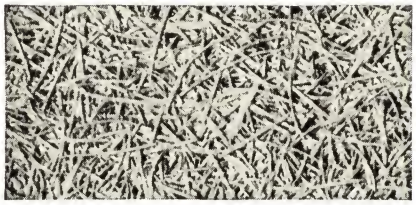
TYPES OF ABSORBEX—There are three types of Absorbex—A, C and F—depending on the fineness of the fibers. All three types are strong, not easily fractured, rodent and vermin proof, and inert to temperatures and humidity changes. They can be spray painted with lead and oil paint without noticeable loss of efficiency. They have high light-reflective qualities and are incombustible.

Type A—Furnished in tile form, beveled or unbeveled, 9 x 9, 9 x 18, 18 x 18, and 18 x 36 in. One-inch thickness only. Larger sizes or factory applied color finishes are optional at additional cost. It may be cemented to concrete or plaster backing or applied on furring strips. See table and details for absorption coefficients in installations for various acoustical requirements. In its natural finish it is light buff in color.

Type C—Furnished only in sheets 20 in. wide by 32, 48, or 64 in. long. Type C is coarser in texture than Type A and relatively more porous. May be placed in concrete forms without mechanical ties, but with suitable form supports.

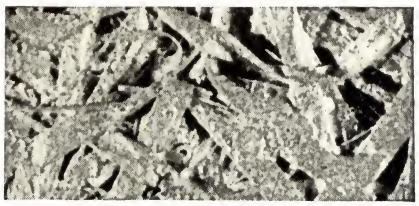
Type F—Furnished in sheets 20 in. wide by 32, 48, or 64 in. long. Coarsest of the three types, Type F has excellent absorption efficiency, high insulation value, fire-resistance, and is economical. Recommended for high-ceilinged structures, such as gymnasiums, armories, auditoriums, etc. It may be satisfactorily placed in concrete forms without mechanical ties, but with suitable form supports.

FLAME TEST—Standard flame tests as required by the Departments of Buildings, New York City, for determining the fire resisting qualities of acoustical materials were conducted by Columbia University on Absorbex. These tests showed that the material does not flame or give off smoke or noxious fumes—thus rating the material fire retardant and permitting its unlimited use in fireproof construction.



Type A Absorbex—Full Size

Type C Absorbex—Full Size



Type F Absorbex—Full Size

SOUND ABSORPTION COEFFICIENTS

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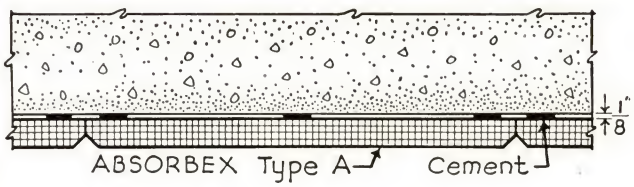
Material	Thickness	Coefficients					Noise Red.Coef.	Mounting
		128	256	512	1024	2048		
ABSORBEX PAINTED BY MFR., OIL BASE PAINT								
Type A	1"	.18	.26	.63	.96	.77	.65	Cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.
Type A	1"	.20	.35	.86	.90	.72	.70	Nailed to 1 x 2 in. wood furring 18 in. o.c.
Type A and F	2"	.32	.50	.95	.96	.80	.80	1 in. Type A spot cemented to 1 in. Type F cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.
Type A	1"	.58	.77	.98	.92	.79	.85	Tile nailed to 1 x 3 in. wood furring 18 in. o.c. and filled in between furring with 1 in. mineral wool.
Type A	1"	.91	.99	.87	.84	.88	.90	Tile nailed to 2 x 4 in. studs 18 in. o.c. and filled between studs with 3½ in. thick mineral wool.
Type C	1"	.15	.23	.40	.66	.62	.50	Cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.
Type C	1"	.21	.27	.48	.63	.54	.50	Nailed to 1 x 2 in. wood furring 16 in. o.c.
Type F	1"	.11	.17	.49	.68	.63	.50	Nailed to 1 x 2 in. wood furring 16 in. o.c.
Type F	1"	.45	.69	.81	.64	.64	.70	Tile nailed to 1 x 3 in. wood furring 18 in. o.c. and filled in between furring with 1 in. mineral wool.
Type F	2"	.21	.44	.85	.70	.72	.70	Cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.

The noise reduction coefficient is the average of the coefficients at frequencies from 256 to 2048 cycles inclusive, given to the nearest 5%. This average coefficient is recommended for use in comparing materials for noise quieting purposes as in offices, hospitals, banks, corridors, etc.
For auditorium treatment, attention should be directed to the coefficients at 512 cycles.

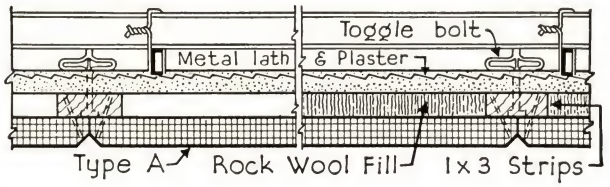
ABSORBEX—Type A
Bowling Alleys, East Liberty Presbyterian Church, Pittsburgh, Pa. Cram and Ferguson, Archt.

ABSORBEX—Type A
Calhoun College, Yale University—John Russell Pope, Archt. Application on ceiling between beams

ABSORBEX INSTALLATION DETAILS

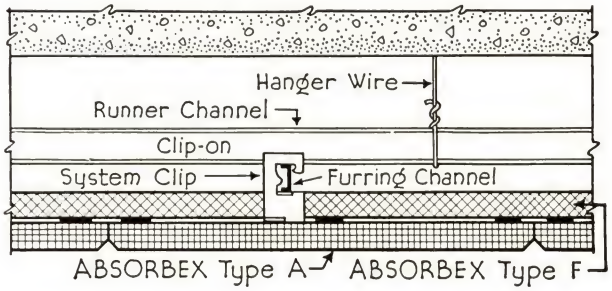


Absorbex Type A—1-in. Beveled Tile, spot cemented to the plaster or concrete ceiling. On plaster ceilings Absorbex is usually cemented (using an approved adhseive) and nailed directly to plaster. If desired, Absorbex may be applied with a heavy bodied adhesive alone to a surface such as concrete.

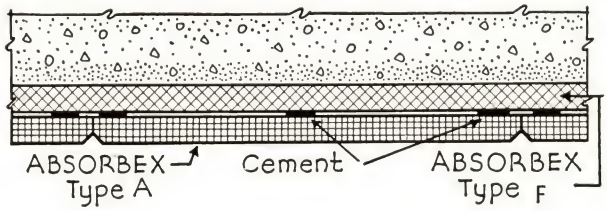


Absorbex Type A—1-in. Beveled Tile nailed to 1-in. x 3-in furring strips toggle bolted to ceiling.

METAL SUSPENSION—Where Absorbex is used as the suspended ceiling by itself, it is supported by metal members fastened to suspended metal furring. Details of this construction on request.

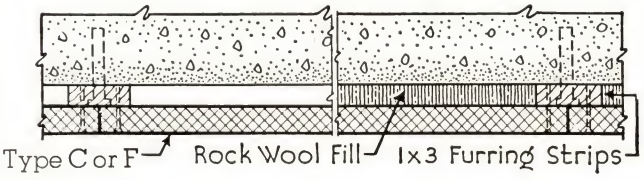


Suspended Ceiling Construction Absorbex Type A—1-in. Beveled Tile when applied to Absorbex Type F (1-in.x20-in.x64-in.) is usually cemented and nailed.

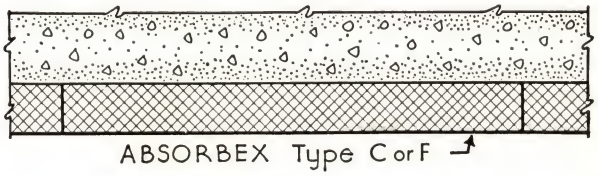


Absorbex Type A—1-in. Beveled Tile, spot cemented to Absorbex Type F (1-in.x20-in.x64-in.).

NOTE: *The type F material may be laid in the forms at the time the concrete is poured or attached afterwards to the concrete slab with expansion bolts or dryvins*



Absorbex Type C or F—(20-in.x64-in.) unbeveled, nailed to 1-in.x3-in. furring strips, bolted to ceiling.



Absorbex Type C or F—(20-in.x64-in.) unbeveled, laid in concrete forms.

Acoustical Material for Less Noise and Better Hearing

CELOTEX ACOUSTICAL PRODUCTS

PAINTABLE ACOUSTI-CELOTEX PERMANENT

CALICEL

CALISTONE

CALICEL ACOUSTICAL CASTONE

VIBRAFRAM ABSORBEX

THE CELOTEX CORPORATION

Chicago · Illinois

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Products

JOHNS-MANVILLE ACOUSTICAL AND SOUND CONTROL MATERIALS.

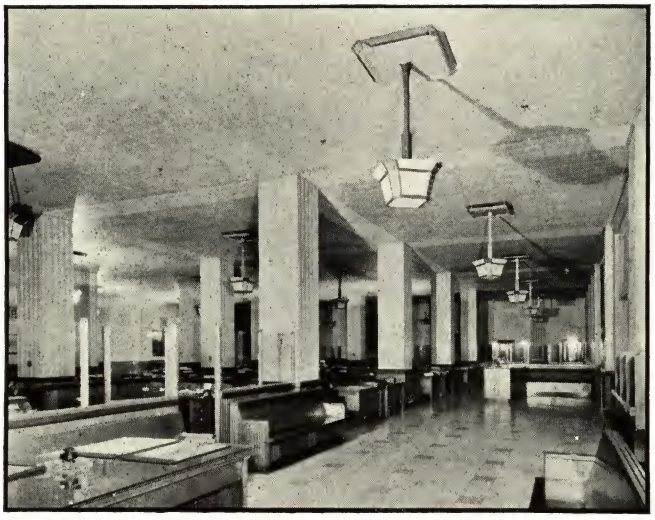
For the following Johns-Manville products, see File Index; Asbestos and Asphalt Shingles; Built-up Roofs; Roof Insulation; Home Insulation; Insulating Board and Insulating Lath; Pipe Coverings and Insulations; Asphalt Tile Flooring; Transite, Flat and Corrugated Sheets; Asbestos Wainscoting and Flexboard; Transite Walls; Steeltex for Plaster; Steeltex Floor Lath; Welded Wire Reinforcement.

JOHNS-MANVILLE ACOUSTICAL AND SOUND CONTROL MATERIALS

Johns-Manville has developed a technique for the use and application of acoustical materials which includes materials fabricated to very definite specifications and, in every case, a design and finished product which is built to fit a specific need or architectural requirement.

For the practical application of these materials, Johns-Manville maintains a staff of trained acoustical engineers in the principal cities of the United States and Canada, and acoustical construction units, located at many convenient points throughout the country, who are equipped to furnish prompt estimates on acoustical work to architects and contractors, and execute any contract satisfactorily.

There is a Johns-Manville sound control material available for every type of problem. The most important of these materials are described on this and following pages. Details involving their sound-absorbing coefficients, weights, methods of erection and similar information, will be found in the latest bulletin of The Acoustical Materials Association, or will be sent on request at any Johns-Manville office.



Sanacoustic Tile Installed in the Wholesale Department of Marshall Field & Company, Chicago

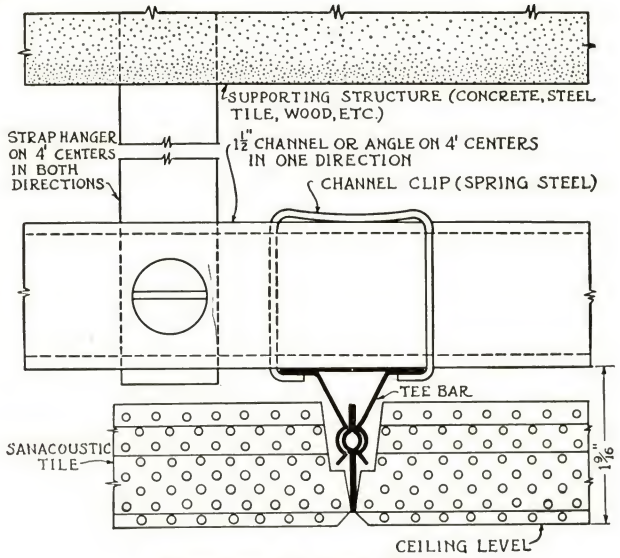
Sanacoustic Tile

Sanacoustic Tile is widely recognized as the ideal acoustical material, due to its high degree of sound absorption, low maintenance cost and permanence. Made up of metal, mineral wool and asbestos, the unit can not decay, and, more important, it will not burn. It consists of a perforated sheet-metal casing, finished with baked enamel, which contains a special rock wool pad, the sound-absorbing medium. The tile units lock into tee bars which are mechanically fastened to the surface to be treated. *(See detail on next page.)*

The face of the rock wool pad is left exposed within the tile to assure the maximum absorption of sound; the back and edges of the pad are covered with asbestos paper to prevent the infiltration of air.

The baked enamel surface of the tile, selected for its toughness and durability, may be washed repeatedly without injury to the finish. It also may readily be painted although this is unnecessary unless a change of color is desired. The permanence of the surface, and the ease of cleaning assure low maintenance costs. The prevention of air infiltration keeps the tile clean longer.

Office of the Manteno State Hospital, Manteno, Ill.
Sanacoustic Tile is suited to a wide range of architectural effects



Sanacoustic Tile Detail (½ size)

Sanacoustic Tile is available in standard white or standard cream enamel, in wood grain finish and in polished or enameled aluminum. Standard tiles are furnished 12 x 12, 16 x 16 and 12 x 24 in. Attractive predecorated designs are also available in the 16 x 16 -in. size.

Sanacoustic Panels

Sanacoustic Panels have the advantages of Sanacoustic Tile, with the additional one of greater unit size. Panels are available in enameled steel: 96, 120, 144 and 168 in. long by 30, 36, 42 and 48 in. wide. In aluminum the same sizes can be furnished up to 48 x 120 in.

Acoustex

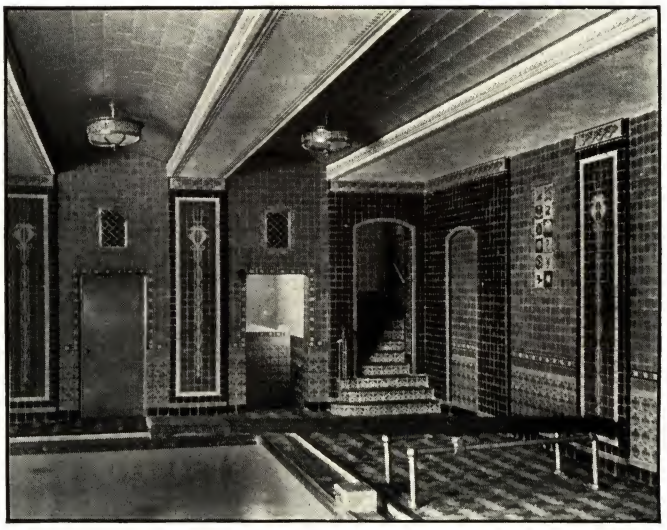
Acoustex is a fire and moisture resistant material made of wood fibre, with a texture architecturally pleasing. Acoustex is particularly desirable in offices, schools, churches and gymnasiums, where a sound-absorbing material is desired in tile or plank effects, in harmonizing colors. It is available in practically any color. However, the natural hue, a light buff, is unusually pleasing and has a high coefficient of light reflection. It is applied with nails and cement.

The material is furnished in different types and sizes. Type R is supplied in 6 x 12, 12 x 12, 12 x 24 and 24 x 24-in. in thicknesses of ⅝, ¾, ⅞ and 1⅛ in. It is also available 6, 12 and 24 in. wide in lengths up to 96 in.

Acoustex is also available as a tile for suspended ceiling construction, a method of application which eliminates the need for lath and plaster. Suspended ceiling tile is furnished 24 in. wide, in lengths from 24 to 96 in., ⅞ or 1⅛ in. thick.

Transite Acoustical Tile

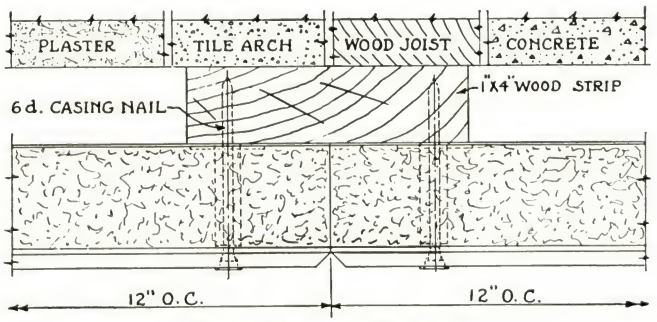
Transite Acoustical Tile consists of perforated Transite and a rock wool sound-absorbing element backed with asbestos paper. Transite, a cement-asbestos product which has been used for many years on industrial building exteriors, has great resistance to moisture and corrosive fumes. Also being entirely mineral, it is particularly fire-resistant. These properties make Transite Acoustical Tile the ideal material for chemical laboratories, gymnasiums and swimming pools, as well as offices and auditoriums.



Y. M. C. A. Pool at Harrisburg, Pa.
The moisture-resistance of Transite Acoustical Tile makes it especially suitable for humid conditions

Brass grommets are inserted in each corner of the tile to maintain the assembly as a unit. They also provide an opening for nailing through the tile to furring strips.

The tile is furnished in a natural-finish buff and a cream-white finish, in pieces 12 x 12 in., 1⅛ in. thick.



Transite Acoustical Tile Detail

Transite Acoustical Panels

Transite Acoustical Panels are similar to Transite Acoustical Tile but with the added advantage of larger units. The panels are available in a natural-finish buff and a cream-white finish, in standard sizes, 12 x 12, 12 x 24, 24 x 24 and 24 x 48 in.

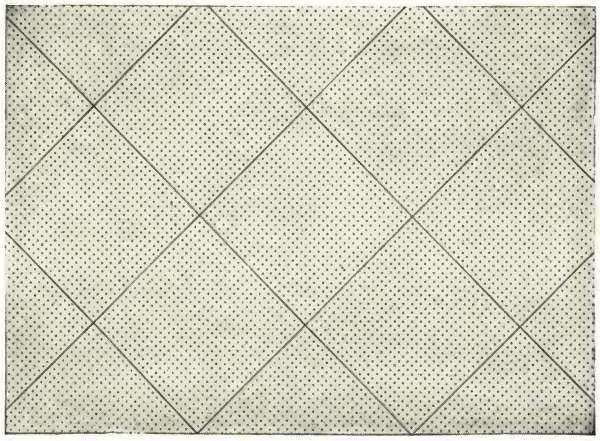
Unbroken areas can be produced by specifying the continuous panel effect, available on special order. In

(Continued on page 4)

Sanacoustic Tile

Sanacoustic Tile, we consider, is the best general sound control material available because of its excellent sound-absorbing efficiency, permanently high light-reflection factor and extremely low maintenance cost.

Transite Acoustical Tile

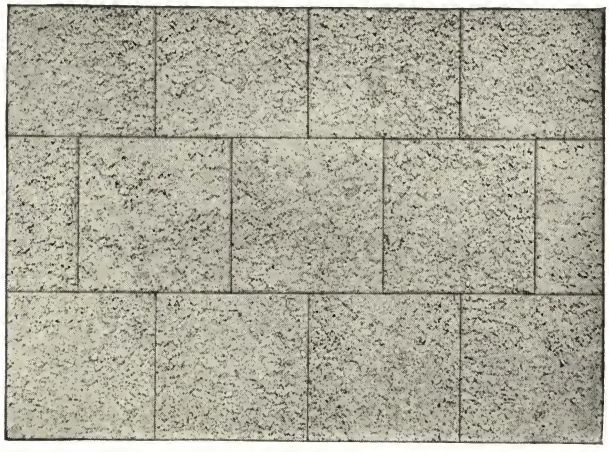


Transite Acoustical Tile is a utilitarian product which, because of its resistance to moisture and corrosive fumes, is ideal for use in chemical laboratories, kitchens, dishwashing rooms and swimming pools.

Acoustex

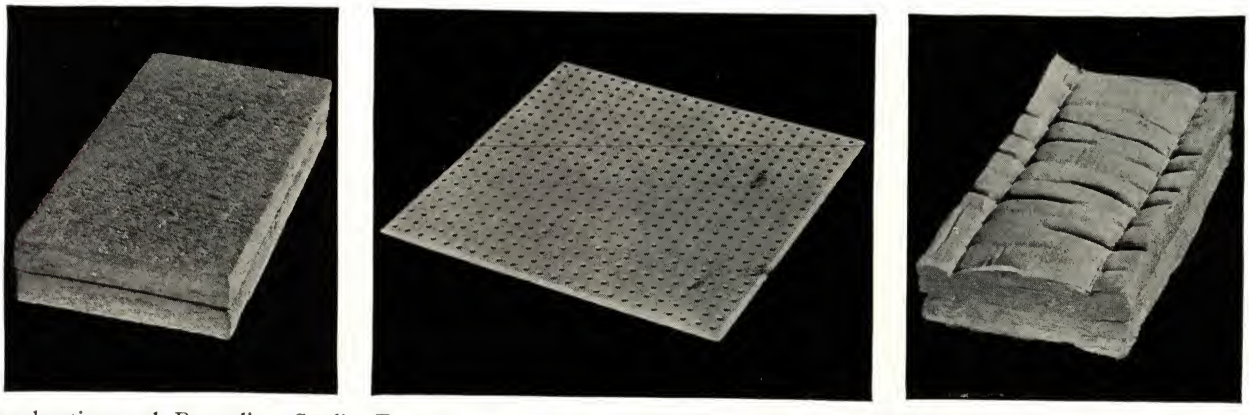
Acoustex is particularly suited to locations that require a smooth, textured material. It is available in a wide range of colors and sizes. The herringbone effect as shown is only one of many possible architectural designs.

Rockoustile



Rockoustile is an exceedingly attractive acoustical material with an open texture. The broken joint construction provides a distinctive wall as well as ceiling pattern and is but one of several adaptable patterns.

Broadcasting and Recording Studio Treatment



Broadcasting and Recording Studio Treatment corrects reverberation and assures faithful sound reproduction: The Transite Acoustical Panel, center, is used over the rigid Studio Element, left, or Banacoustic Blanket, right, to provide the correct acoustical balance so essential in the achievement of quality broadcasting.

One of WGN's Broadcasting Studios, Chicago
Wall and ceiling surfaces finished with Transite Acoustical Panels and the entire room separated from the building structure by the J-M System of Sound Isolation

these panels, the perforations in the Transite are continuous, without the usual border.

Rockoustile

Rockoustile is a distinctly attractive acoustical material manufactured from expanded mica. Its natural color is an iridescent golden ecru, but it is also furnished with an ivory cream finish. On special order, the material may be had in light-reflecting flat white and in slightly varying pastel shades of gray, buff, blue and pink. It can be supplied in square-cut or bevel-edged tile, as desired, in standard sizes 6 x 12, 12 x 12 and 12 x 24 in., 1 in. thick. It is ordinarily applied with nails and cement.

The Rockoustile Treatment of St. Anselm's Church, Pittsburgh, Pa.
"Has not only corrected the reverberation, but has beautified the church"

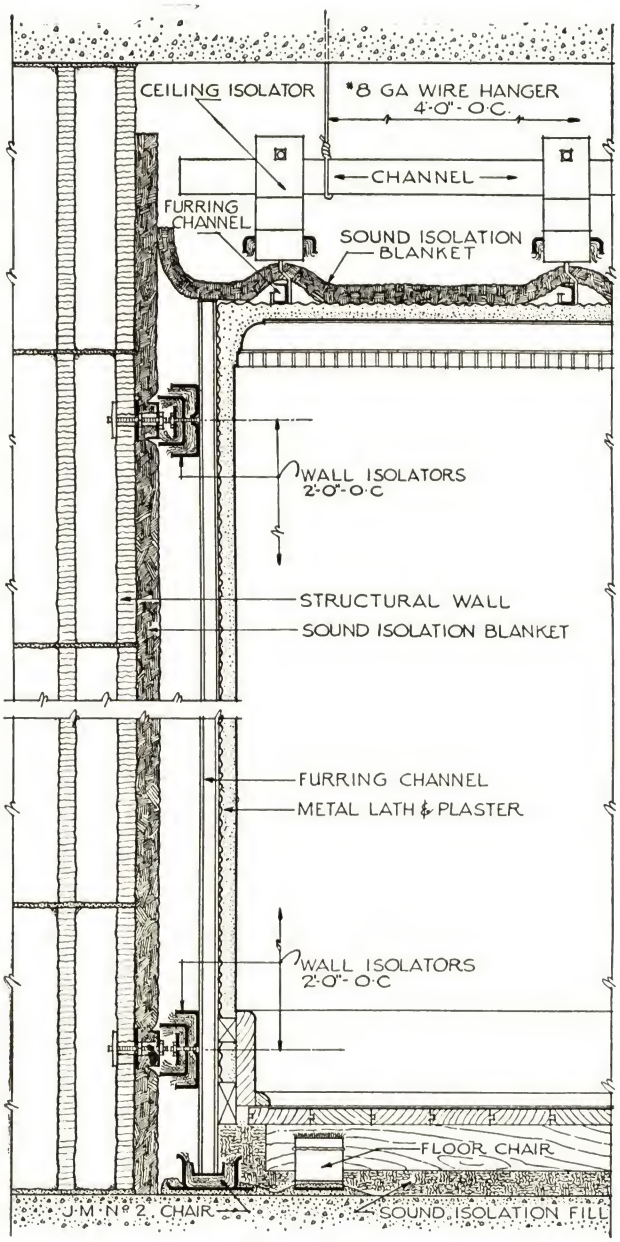
Nashkote

Nashkote Acoustical Finishes present an acoustical treatment consisting of Asbestos Akoustikos Felt cemented to the surface to be treated and covered with a membrane secured by Acoustical Size. This membrane may be painted muslin, with a smooth or sand finish or caen stone, or it may be burlap.

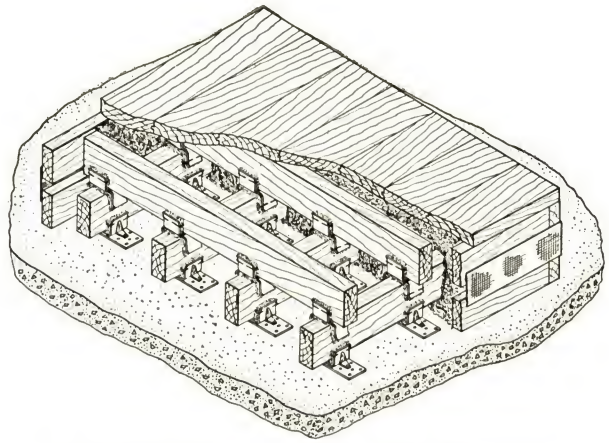
J-M System of Sound Isolation

The J-M System of Sound Isolation consists of lightweight isolators installed in floors, walls and ceilings as shown in the drawing, providing a means of securing a finished surface to a wall, ceiling or floor which not only holds the various parts together but also breaks the otherwise direct contact of solid materials which would conduct sound and vibrations. There are no through connections. The isolator units transform and absorb the vibrational energy. Sound isolation blanket or fill used with the isolators adds a sound-damping medium and prevents drum action. There are different types of chairs and isolators for different constructions—for walls, floors and suspended ceilings.

For machinery bases, J-M Vibration Isolation Platforms are designed to isolate or divorce the vibrating



Johns-Manville System of Sound Isolation as applied to Walls, Ceilings and Floors



Typical J-M Vibration Isolation Platform Construction

mechanisms from the rest of the structure and prevent the transmission of noise-producing vibrations. They make possible the allocation of machinery at points of economic advantage, without creating a disturbance in adjoining parts of the building.

Sound Absorbing Lining for Air-Conditioning Ducts

Noise in the air stream accumulates as it passes through the mechanical and power elements of an air conditioning system. The solution to this disturbance problem lies in the use of efficient sound-absorbing linings within the ducts to remove and dissipate sound as it passes through them.

In the entire field of sound control there is no type of service which places such exacting requirements on a sound-absorbing material as does duct lining. A satisfactory material must be fireproof, highly sound-absorbent, moisture-resistant, and have a surface which will not materially increase friction losses in the duct system. Airacoustic Sheets, developed for this type of work, meet these specifications completely.

The necessary extent of the lining naturally depends upon the intensity of the noise. Generally speaking, an appreciable and, in most cases, satisfactory reduction can be effected by lining a duct for a distance of at least ten times the average of its cross-sectional dimensions. In severe cases the entire duct must be lined, regardless of dimensions and length. In cases where ducts are unavoidably short, a honeycomb arrangement of sound-absorbing partitions must be used to divide large ducts into smaller ones.

Airacoustic Sheets — Airacoustic Sheets are incombustible, moisture-resistant sound-absorbents which are used chiefly inside air-conditioning units and ducts. Manufactured in rigid form from rock wool and a suitable binder. Furnished 24 x 36 in., in ½, 1 and 1½ in. thicknesses.

Broadcasting Studio Acoustics

There is no sound control problem as critical as that encountered in broadcasting studios. Not only must proper balance be maintained between the fundamentals, harmonics and over-tones of speech and music, as generated within the studios, but the isolation of extraneous sound from the studios and control rooms must also be carefully considered. *(See detail of* J-M System of Sound Isolation *on preceding page.)*

Johns-Manville specializes in the design and construction of broadcasting studios, maintaining a consulting service for the assistance of architects, engaged on such projects. This service embraces all phases of the problem, including the selection of the studio site, planning the studio group, relationship of studios and control rooms, studio proportions and size, acoustical correction by the use of materials with the proper characteristics and distribution, together with the all-important consideration of adequate sound isolation. Some recent studio installations by Johns-Manville are:

KDKA Studios, Pittsburgh, Pa., N. B. C. Network.
KRLD Studios, Dallas, Texas, C.B.S. Network.
WABC Studios, New York, N. Y., C.B.S. Network.
WBBM Studios, Chicago, Ill., C.B.S. Network.
WCCO Studios, Minneapolis, Minn., C.B.S. Network.
WDBJ Studios, Roanoke, Va., C.B.S. Network.
WEAF Studios, New York, N. Y., N. B. C. Network.
WENR Studios, Chicago, Ill., N. B. C. Network.
WGN Studios, Chicago, Ill., M.B.S. Network.
WJSV Studios, Washington, D. C., C.B.S. Network.
WJZ Studios, New York, N. Y., N. B. C. Network.
WKY Studios, Oklahoma City, Okla., N. B. C. Network.
WLS Studios, Chicago, Ill., N.B.C. Network.
WMAQ Studios, Chicago, Ill., N. B. C. Network.
WOR Studios, New York, N. Y., M.B.S. Network.
WOW Studios, Omaha, Nebraska, N.B.C. Network.
WWJ Studios, Detroit, Mich., N.B.C. Network.

Complete Acoustical Brochures Available

For offices, hospitals, restaurants, schools and broadcast studios, there are individual brochures available on J-M Acoustical and Sound Control materials. They may be obtained on request at any Johns-Manville office.

Airacoustic Sheets installed in air-conditioning duct

MEMORANDA

THE RED BOOK

1938 EDITION

SOUND CONTROL

UNITED STATES GYPSUM COMPANY

10
45

SOUND CONTROL SERVICE

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UNITED STATES GYPSUM COMPANY

Engineering Sales Division

GENERAL OFFICES

300 West Adams St., CHICAGO, ILL.

SALES OFFICES IN ALL PRINCIPAL CITIES—FOR LIST, SEE BACK COVER

• • •

RESEARCH, DEVELOPMENT and SERVICE

ACOUSTICAL MATERIALS ASSOCIATION—Manufacturers of sound absorbing materials have formed the Acoustical Materials Association, the purpose of which is to promote research in architectural acoustics and furnish architects and builders with reliable data on acoustical materials. Official Laboratories have been established under the direction of the leading authorities on this subject. The Association published its first data in February, 1934, and its fifth publication in January, 1937. You may obtain a copy of this data by calling the nearest USG Office.

RESEARCH and DEVELOPMENT—All USG Sound Control Materials and Systems are the result of directed research at the Building Materials Laboratory of the United States Gypsum Company. This laboratory occupies an entire two story building owned by the United States Gypsum Company and located at 1253 West Diversey Parkway, Chicago, Illinois, especially equipped for research and testing. The research work is carried out under the direction of trained physicists and chemists, architectural engineers and investigators, comprising a personnel of some fifty individuals. Here new materials and methods are produced, tested and developed.

The laboratory is one of the few owned and maintained by a manufacturer of acoustical products. It is used to test and improve upon modern developments in the manufacture of acoustical materials. It is also used for control tests on the company's output, so that the acoustical absorption and sound insulation afforded by the sound control products of the United States Gypsum Company are constantly maintained equal or superior to the published determinations of recognized acoustical laboratories.

SERVICE—The United States Gypsum Company maintains a fully competent experienced corps of acoustical engineers, completely equipped to assist architects on any problem involving acoustical correction or sound insulation. They render this service, without obligation, in advance of the building construction or will gladly advise corrective methods for existing buildings in which sound difficulties are experienced.

In auditoriums this service includes analysis of the effect of curved or other sound concentrating surfaces, and investigation for objectionable echoes. In each case it indicates changes in design where they seem advisable. Where the reverberation is too great for comfort, recommendations are made for economically covering the necessary areas with acoustical absorbents.

Because the United States Gypsum Company handles all phases of the problem including manufacture and installation through its Engineering Sales Division or its authorized erectors and provides, not only materials for sound absorption, but also a complete system for the insulation of sound, architects are assured that absorption materials will not be recommended where sound insulation is required or vice versa.

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ACOUSTONE · USG ACOUSTICAL TILE

Incombustible · Decorative

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PHYSICAL CHARACTERISTICS

COMPOSITION and THICKNESS—Acoustone* is formed from inorganic, specially processed filaments. It provides an unusually high degree of sound absorption. The standard thicknesses are ¾ and 1 inch.

ACOUSTONE D—TECHNICAL DATA—Acoustone D has been tested and approved as a sound absorbent of high efficiency by recognized acoustical laboratories.

Absorption—The coefficients of absorption shown below are from tests made by the Acoustical Materials Association Laboratories:

Pitch	C2	C3	C4	C5	C6	Noise Red. Coef.
Frequency	128	256	512	1024	2048	
UNPAINTED						
¾-in. Thick	.19	.39	.66	.78	.65	.60
1-in. Thick	.37	.65	.84	.79	.72	.75
BRUSH PAINTED WITH LEAD AND OIL PAINT						
¾-in. Thick	.24	.52	.69	.66	.58	.60
1-in. Thick	.43	.71	.83	.77	.69	.75

SIZES (AREAS)—Tiles are made in the following standard rectangular sizes: 12 x 12 in., 9 x 18 in. Special shapes and sizes may be obtained when required.

OUTSTANDING DECORATIVE APPEARANCE—In addition to its high degree of acoustical efficiency, it is outstanding in its decorative effect. The surface texture is quite similar to travertine stone, surpassing it, however, in the richness and warmth it supplies through a wider range of color tones. From the viewpoint of design, it is adapted to harmonious, unobtrusive inclusion in any decorative scheme. Ashlar masonry walls for interiors can be constructed with Acoustone facings that are as beautiful as natural stone. Interiors in the modern trend may be delightfully handled in tile with a metallic lustre in many shades and colors. Acoustone may be readily cut to irregular sizes and shapes. It fits all decorative interiors and is particularly adaptable to modern motifs. The tile may be laid up in many interesting patterns. There is no disconcerting mechanical effect. It is sanitary and easily cleaned. Due to its natural beauty, Acoustone usually is installed without decoration. If desired, Acoustone may be painted without materially affecting its sound absorbent efficiency. Colored borders, cornices in relief, and modified coffered work are easily obtained. Joints between tile units may be accented with a V profile for decorative purposes or made less prominent as desired.

COLORS—Acoustone is furnished in standard integral colors of light-reflecting white, ivory or cream. Special integral colors will be made to order. Acoustone may be painted with ordinary lead and oil or similar wall paints without materially affecting its acoustical efficiency. When left undecorated, the inherent beauty of Acoustone enhances any decorative plan. Acoustone has none of the appearance of a mechanical device. Its beauty improves the appearance of any room. It is available in delicate pastel shades for the enrichment of borders, with fields in efficient light reflecting shades. It is readily cleanable which greatly reduces maintenance costs.

INCOMBUSTIBLE—Since it is made from specially processed mineral filaments, Acoustone is incombustible.

LIGHT WEIGHT—Due to its extremely light weight, it is safely and permanently cemented over plaster in both new and old work.

EASILY CLEANED—The complete and thorough cleaning of the porous structure of Acoustone with an ordinary vacuum cleaner thoroughly evacuates any foreign matter that may become lodged in the tile. Accumulations of dirt on the surface of the material are easily removed by the same method restoring the original color and appearance. The cost of such cleaning is less than one quarter of a cent per square foot of area cleaned and the wear on the tile, incidental to the cleaning, is so negligible that no appreciable difference is made in its sound absorbing ability after repeated cleanings.

DURABLE—Because Acoustone is made from especially processed mineral filaments integrally colored and completely cleanable, it is as enduring as the structure in which it is installed.

SANITARY—Acoustone offers complete sanitation. It is inorganic, durable, completely cleanable. It provides an aseptic, readily and cheaply cleaned sound absorbent for hospitals, sanitariums, and restaurants.

INSTALLATION—The manufacture and acoustical design of Acoustone is entirely under the control and is the sole responsibility of the United States Gypsum Company. Installation is by the United States Gypsum Company or its authorized erectors.

*Registered Trade-Mark

This policy enables the purchaser to buy a result without reference to the manner in which the result is obtained. It definitely fixes the responsibility as it frees the purchaser or the architect from all details.

Such a policy, of course, means that the United States Gypsum Company or its authorized erectors will refuse to install Acoustone where satisfactory results will not be obtained.

The installation of Acoustone may be made in busy offices, banks, restaurants, brokers' offices, hospitals, etc., at times that will eliminate any interruption in the usual routine.

For this work only experienced mechanics are employed, who will carefully protect the walls, floors and furnishings against damage during the installation.

ECONOMICAL—Acoustone is not expensive to install. When the savings due to its low maintenance costs are considered, it is actually a low cost acoustical material.

Specifications · ACOUSTONE

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Acoustone. If more than one thickness of Tile is used, specify the thickness for the various areas.*

(2) BASE

NOTE—*Describe base.*

(a) On new work, a good level brown coat of plaster offers the best base for Acoustone.

(b) Acoustone may be applied direct to any plastered surface if the plaster is in good condition.

(c) Acoustone may be applied to a firmly supported Sheetrock surface.

(3) ACOUSTICAL TREATMENT MATERIAL

(3a) Acoustical treatment material shall be **[¾-in.] [1-in.]** thick Acoustone of colors selected by the architect.

(3b) Joints between Tiles shall be **[a V formed by accurately beveling the tile edges] [as detailed] [specify].**

(3c) Tiles on walls and fields of ceilings shall be of size, shape, disposition and color as shown on the various details and approved shop drawings.

(4) APPLICATION of ACOUSTONE

(4a) Acoustone shall be completely erected by the United States Gypsum Company or one of its authorized erectors of sizes, colors and pattern shown on the drawings and details.

(4b) The Tile shall be laid close, accurately cemented in position in full conformance with the manufacturer's specifications.

SHORT FORM

The contractor shall allow the sum of $..... to cover the cost of acoustical treatment, using Acoustone to be furnished and erected by the United States Gypsum Company or one of its authorized erectors as directed and approved by the architect.

BANKER'S TRUST COMPANY, NEW YORK

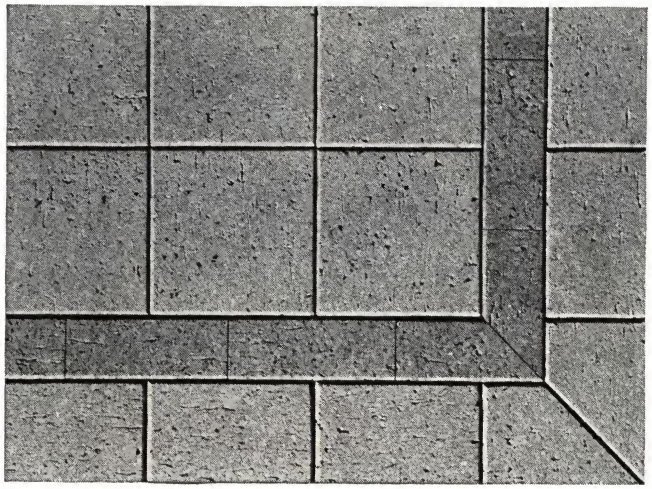
This Acoustone ceiling absorbs the usual conflicting business office noises, assuring excellent working conditions.

TRIANGLE RESTAURANT, CHICAGO

The Acoustone ceiling here absorbs the usual restaurant clatter and noise, producing a quiet, restful atmosphere.

TYPICAL ACOUSTONE PATTERNS

Acoustone May Be Obtained, on Order, Integrally Colored to Special Shades



ACOUSTONE—ACTUAL SIZE SHOWING SURFACE TEXTURE

United States U.S. Gypsum Company

QUIETILE*

Low Density Wood Fiber Acoustical Tile

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PHYSICAL CHARACTERISTICS

DESCRIPTION—Quietile is a decorative interior tile used to absorb sound and correct noisy conditions in offices, restaurants, etc., and to improve hearing in auditoriums, theatres, and buildings of similar use.

It is a wood fiber product but should not be confused with ordinary insulating tiles used primarily for insulating purposes. It has unusually low density and exceptionally high and uniform absorption. It is a homogeneous material made by a unit felting process to produce a material of high acoustical excellence. Its attractive surface is free from surface oddities and puncturing, not uncommon in acoustical materials.

ABSORPTION—Quietile classes among the high-efficiency absorbents, the one-inch thickness having a 70 per cent noise reduction through the significant pitches, 256 to 2048 cycles. This means that through these pitches it absorbs 70 per cent of all sound striking it and that the reverberation time and the noise level in the room where it is used are greatly reduced.

It is important to note in considering the efficiency of Quietile that it has unusually efficient absorption through the significant ranges. This means, for example, that Quietile is efficient in absorbing the sound of the human voice, around 512 cycles, and also efficient in absorbing the noise of a typewriter, an octave or more higher.

Quietile Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Reduction Coefficient
1-in.	.30	.52	.73	.82	.75	.70

Absorption Coefficients are based on cemented to plaster mountings.

COLOR and TEXTURE—Quietile is made in two standard textures, sanded and brushed surface. The natural color of the sanded texture is ivory, that of the brushed surface texture is a mottled light buff.

On order either of these textures or surfaces will be mill-tinted to any of the five standard colors in light pastel shades of Rose, Cream, Blue, Buff, and Green, all of relatively high light reflecting value.

QUIETILE • SANDED TEXTURE • ACTUAL SIZE

Quietile may be spray tinted with lithopone or titanox paint reduced with mineral spirits.

SIZE and THICKNESS—The standard size of Quietile is 12 x 12 in. in area and 1 inch thick. Either the brushed or sanded surface can be obtained in this size.

All Quietile units are finished on all four edges with a 3/16-inch bevel. Other sizes may be obtained at a slight increase in cost.

ADVANTAGES—

High Absorption—The absorption at the significant frequencies is extremely high.

Low Cost—In spite of its high efficiency, Quietile is a low cost material—so low in cost that it makes possible the use of acoustical treatment in almost any type of building where noise is a problem.

Appearance—The surface of Quietile is similar to that of other fiber tiles used primarily for decoration. It is free from perforations and other surface peculiarities that fall into a regular pattern. Its efficiency is secured by the natural surface of the tile in combination with a low and accurately controlled density. The result is an appearance just as pleasing as if the tile were made first of all for a decorative rather than an acoustical effect. This appearance is suited to any type of interior.

Maintenance—Cleaning is always cheaper than redecorating. Quietile can be cleaned with a vacuum cleaner. The mill-tinted pastel shades are deep tinted to withstand several cleanings before re-tinting becomes necessary. Painting reduces the sound absorptive capacity and should not be resorted to. A change in color should be accomplished by tinting or staining.

Easy Erection—Quietile is easily and quickly erected in either an old or a new building. A good level plaster (preferably a brown coat) or firmly supported Sheetrock Surface is all that is required.

*Registered Trade-Mark

Specifications · QUIETILE

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List here all walls and ceilings to be covered with Quietile. If more than one texture or color of material is to be used, list each separately for the various areas.*

(2) BASE

NOTE—*Describe base.*

(a) *On new work, a good level brown coat of plaster offers the best base for Quietile.*

(b) *Quietile may be applied direct to any plastered surface if the plaster is in good condition.*

(c) *Quietile may be applied to a firmly supported Sheetrock surface.*

(3) ACOUSTICAL MATERIAL

(3a) Acoustical material shall be Quietile in **[a natural color] [mill tinted in standard shades] [cream] [green] [rose] [buff] [blue]** and **[sanded] [brushed]** surface.

(3b) Tile shall in general be 1 inch thick by 12 x 12 in. with special sizes as shown on the various details.

(3c) Joints between tile shall be a 3/16 in. "V" formed by accurate beveling.

(4) APPLICATION of QUIETILE

NOTE—*Quietile may be applied in a diagonal or a straight pattern with a border effect if desired. Other patterns may be worked out but they will require special tile sizes.*

(4a) Quietile shall be completely erected by the United States Gypsum Company or by one of its authorized erectors.

(4b) The tile shall be cemented or cemented and nailed in position, care being taken to align tile and maintain an even surface in full conformance with the manufacturer's specifications.

QUIETILE • BRUSHED TEXTURE • ACTUAL SIZE

PERFATILE*

Incombustible Perforated Metal Tile Type

• • •

PHYSICAL CHARACTERISTICS

DESCRIPTION—Perfatile is a perforated metal tile concealing highly absorbent pads of mineral wool. The edges of the tile are beveled and returned vertically to be held firmly in place by special tee runners. The tile are painted to comply with rigid specifications and to give a finish pleasing in color, high in light reflection, and protected against abrasion due to ordinary maintenance cleaning.

The mineral wool pads are furnished either completely enclosed by a fire resistive membrane or wrapped in flame proofed muslin. With the latter type the top of the pads are fully sealed during erection with fire resistive membrane. Either type of pad eliminates the so-called breathing action and avoids the accumulation of dirt on the surface which would result in a loss of absorption and an undesirable condition from the standpoint of sanitation.

ABSORPTION—In addition to its being the highest type of acoustical treatment from a construction standpoint, Perfatile is also one of the best from the standpoint of absorption efficiency. Its absorption coefficients present a fairly flat curve at the significant pitches, meaning more than average uniformity through the most important sound frequencies. Coefficients below are by the Official Laboratories of the Acoustical Materials Association.

Perfatile Type	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Red. Coef.
Muslin Wrap. Pad (Type A Pad)	.37	.52	.93	.94	.88	.85
Memb. Enc. Pad (Type B Pad)	.43	.61	.91	.88	.77	.80
Mounting: Metal supports applied to 1 x 2-in. wood furring.						

*Trade-Mark

COLOR and FINISH—Perfatile is finished in baked enamel. It is made in two standard colors, ivory for use where warmth is desired, and white. Both have high light reflection.

SIZES—Perfatile is made in units 12 x 24 in. with a center groove which gives the effect of 12 x 12 in. units.

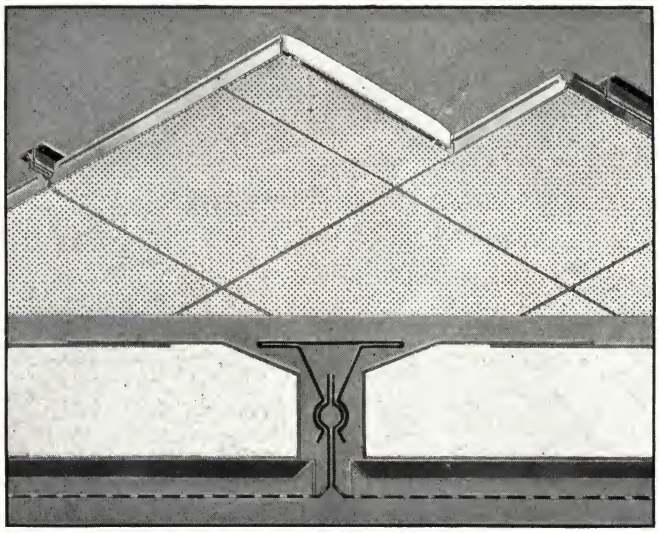
ADVANTAGES—

Fireproof—The metal tile and the mineral wool pads are entirely incombustible. The pad wrapping is all flame-proofed and fire resistive.

High Efficiency—The table on page 6 shows the extremely high absorption of Perfatile.

Washable—The painted metal surface of Perfatile may be washed many times before it becomes necessary to repaint it. Washing in no way affects the absorption efficiency of the tile or its appearance.

Paintable—Perfatile can be repainted many times without affecting the absorption efficiency of the construction. The perforations constitute approximately fourteen per cent of the total tile surface, and although small enough to blend into the neutral color of the tile, they are still large enough to maintain full absorption efficiency unaffected by many paintings.



CROSS SECTION

Specifications · PERFATILE

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Perfatile.*

(2) BASE

(2a) Where suspended ceiling construction is used, 1½ inch carrier channels spaced not to exceed 4 ft. on centers, shall be furnished in place by others. The 1½-inch channels shall be hung so as to present a level under-surface. Sufficient cross channels shall be wired in place across the top of the 1½-inch carrier channels to hold them in position and prevent swaying.

(2b) Where Perfatile construction is to be held against concrete joist construction, wire ties shall be furnished in place by others on not more than 4-ft. centers along all joist bottoms. These ties shall consist of two No. 10 gauge galvanized wire projecting 4 inches below joist bottom. The ties must be carefully lined up in lines at right angles to the joists.

(3) ACOUSTICAL TREATMENT MATERIAL

Acoustical treatment material shall be Perfatile, a perforated metal tile, 12 x 24 in. in size, with a center groove giving the appearance of a 12 x 12 in. tile, the edges of which are beveled and return vertically to be held firmly in place by special tee runners. The perforated metal tile shall conceal a mineral wool absorbent pad held slightly away from the perforated metal surface by means of a pad support. The absorbent pad shall be completely enclosed and sealed on four edges, face, and back with a flame-proof membrane. (Or the absorbent pad shall be completely wrapped in flame-proof muslin and the top sealed during erection with flame-proof membrane.)

The perforated metal tile shall have a prime and finish coat of baked enamel on the back, and on the face a prime coat, an intermediate coat, and a finish coat of baked enamel.

(4) APPLICATION of PERFATILE

(4a) SUSPENDED CEILING CONSTRUCTION—The acoustical contractor shall wire or clip the special tee runners to the under-surface of the 1½-inch carrier channels, furnished in place by others, spacing the tee runners on 24-inch centers to hold the perforated metal tile. Perforated metal tile, pad supports, and absorbent pad shall be carefully assembled and pressed into position on the special tee runner. All edges shall be kept in alignment and care must be taken to secure a level under-surface. A suitable moulding shall be furnished in place by **[the acoustical contractor] [others]** at the junction of the perforated tile ceiling with the walls and columns. Care shall be taken in cutting and fitting the tile around all openings.

(4b) PLASTERED CEILING CONSTRUCTION—

NOTE—*Same as in (4a) except that the special tee runners shall be attached to the present ceiling by means of suitable clips or wire and brought to a level surface.*

SHORT FORM

Perfatile treatment shall be furnished and erected by the United States Gypsum Company or one of its authorized erectors on all areas indicated on plans to receive acoustical treatment.

SABINITE* ACOUSTICAL PLASTER

Incombustible · Economical

• • •

PHYSICAL CHARACTERISTICS

TYPES—

Sabinite A—For general use on ceilings or above wainscots.

Sabinite B—For troweling to a smooth hard surface, readily cleanable on wainscots or wall surfaces exposed to abrasion.

Sabinite 38—Specially developed to resist moisture in natatoriums, shower rooms, laundries, etc., when applied over Oriental Exterior plaster base. (See below.)

Casting Sabinite—For casting ornamental parts.

COMPOSITION—Sabinite Acoustical Plaster is a permanent, reasonably priced, sound-absorbing plaster. Sabinite A is used over the standard scratch and brown coats, in place of hard, sound-repellent plaster finishes. Sabinite No. 38 is applied over Oriental Exterior Stucco base coats where extreme humidity, as in natatoriums, is present. Gypsum base coats may be used where humidity is less severe but consult manufacturer first. Sabinite absorbs sound because of its great multitude of tortuous, minute passages, which have their start in tiny openings at its surface.

ABSORPTION—Coefficients below are by the Official Laboratories of the Acoustical Materials Association:

Sabinite Type	Thickness	128 Cyc.	256 Cyc.	512 Cyc.	1024 Cyc.	2048 Cyc.	Red. Coef.
A	½-in.	.34	.30	.31	.61	.69	.50
A	¾-in.	.36	.37	.55	.67	.67	.55
38	½-in.	.25	.26	.32	.60	.76	.50

THICKNESS—Applied ½-in. thick in two successive coats, or ¾-in. thick in three coats—each ¼-in. thick, with the usual plasterer's tools.

APPEARANCE—Sabinite presents an interesting surface texture similar to a pebbled, semi-smooth stucco. Sabinite A may be left with a troweled finish.

COLORS—Both Sabinite A and No. 38 are furnished in white and four standard colors or tints: ecru, ivory, cream, buff. Special colors will be furnished on orders exceeding 5 tons. On small orders, Sabinite may be tinted to special colors on the job.

*Registered Trade-Mark

It can be painted or decorated after application without loss of efficiency. (See specifications, page 9.)

INCOMBUSTIBLE—Composed of inorganic aggregates bonded together with gypsum plaster, long known as a fireproofing material, it is incombustible.

DURABLE—Sabinite Plaster is as rugged and durable as the ordinary sand float finish.

It is unaffected by dampness and does not shrink or swell with climatic changes.

SANITARY—Because it contains no vegetable or animal matter, Sabinite is sanitary. Like any gypsum plaster it is vermin proof.

DISTRIBUTION—Sabinite is made at the principal mills of the United States Gypsum Company, conveniently located for lowest transportation costs and quick delivery.

COVERING CAPACITY—One ton of Sabinite A applied in two coats, each ¼-in. thick, will cover a surface of from 100 to 110 sq. yds. The average plasterer can apply 100 sq. yds. of Sabinite A to full specifications in 11 hours.

To mix this material, including delivery to the mechanic, requires but 7 hours of labor.

A ton of Sabinite No. 38 covers from 60 to 75 yards and requires 14 hours of a plasterer's time and 8 hours of mixing labor per 100 sq. yds.

APPLICATION and SUPERVISION—It is applied by the plastering contractor in lieu of the usual finish. Its installation is always supervised by an experienced representative of the United States Gypsum Company.

EASY TO APPLY—Nothing but water is added to make Sabinite ready for application. It spreads with a trowel from the hawk, like ordinary plaster and bonds easily and firmly to the base coat.

ECONOMICAL—The low cost of the material, ease of application and excellent covering capacity, coupled with its relatively high sound absorption, makes Sabinite a most economical material.

United States USG Gypsum Company

Specifications · SABINITE ACOUSTICAL PLASTER

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Sabinite Acoustical Plaster. If Sabinite A, B, No. 38, and casting Sabinite are used, list and locate separately. If different colors of integrally tinted Sabinite are used, specify the colors for the various areas.*

(2) GROUNDS

On walls, in addition to the usual grounds set for the scratch and brown coat plaster base, set additional **[½-in.] [¾-in.]** thick grounds to assure proper thickness of the Sabinite and form nailing for wood trim, etc. All corner beads shall be set to conform to the increased plaster thickness.

(3) ACOUSTICAL TREATMENT MATERIAL

(3a) Acoustical Treatment material shall be **[Sabinite A] [Sabinite B] [Sabinite 38] [and] [Casting Sabinite]** Acoustical Plaster as manufactured by the United States Gypsum Company.

(3b) Sabinite shall be integrally tinted by the manufacturer at the mill.

NOTE—*Integrally tinted Sabinite should be a shade lighter than the same color would be in paint because the texture of Sabinite casts a slight darkening shadow.*

(4) SCRATCH and BROWN COAT BASE

(4a) SABINITE A and B—All surfaces to receive Sabinite A **[and B]** shall be given scratch and brown coats of gypsum plaster containing no more than two parts of sand (by wt.) to one part of plaster.

(4b) SABINITE No. 38—Hydraulic Sabinite shall be applied over **[Oriental Exterior Stucco] [Gypsum]** Base Coat.

NOTE—*Oriental Exterior Stucco Base Coat is a prepared material requiring no sand or other addition except water. It is applied in two coats in place of the regular scratch and brown coats. Use where humidity is severe.*

(4c) The scratch coat shall be thoroughly broomed before the second or brown coat is applied. The second or brown coat shall be deeply raked after straightening.

(5) APPLICATION of SABINITE

(5a) The application of Sabinite shall only be made under the supervision of the United States Gypsum Company.

The plastering contractor shall arrange with the nearest sales office of the United States Gypsum Company for the servicing of Sabinite and shall not commence its application until so directed by the manufacturer's service representative.

Sabinite shall be applied in **[two] [three]** coats each ¼ in. thick over a thoroughly dry base coat. The second **[and third]** coat**[s]** shall not be applied until the previous coat has set. The instructions of the service representative for floating and troweling each coat shall be observed throughout regardless of his presence.

(5b) In Casting Sabinite, a fairly dry mix is used and pressed in a mold to a thickness of about ½ in. and backed with molding plaster and fiber—the procedure is the same as for ordinary cast plaster work. Cast Sabinite shall be attached in the same manner as ordinary cast plaster work.

PAINTING SABINITE

SPRAY PAINTING—Sabinite may be spray painted. Depending on the conditions and the effects desired the United States Gypsum Company will make definite recommendations as to the paint or spraying lacquer to be used, the type of spraying equipment best adapted to the conditions and application specifications.

KANSAS CITY AUDITORIUM, KANSAS CITY, MO.
Gentry, Voskamp & Neville, Archts. Sabinite Ceiling assures excellent hearing condition.

USG SYSTEM of SOUND INSULATION*

Fireproof Wall and Floor Constructions

• • •

DESCRIPTION

PURPOSE—To prevent the passage of sound from one room to another.

THEORY and DESCRIPTION—Sound passes through a wall, floor or ceiling by vibrating it as a diaphragm. The sound strikes it and sets it into vibration. This vibration sets up new sound waves, reduced in intensity on the opposite side. The USG System of Sound Insulation is built upon the principle of providing room boundaries in which one side can vibrate while the other side does not. This is accomplished by constructing a furred surface supported on springs.

The regular plastering system is applied directly to the spring supported furring. Concrete floors may be poured on the resiliently supported sleepers (see details, page 11).

ADVANTAGES—The USG System of Sound Insulation possesses the following advantages over other methods of sound insulation.

(1) Permanence—The efficiency of this construction, being primarily obtained by steel spring devices, is maintained permanently.

(2) Fireproofness—Only incombustible materials, steel and gypsum, are employed.

(3) Economy—Because of its simplicity of construction, the USG System of Sound Insulation offers a maximum of efficiency at a reasonable cost.

SALE and INSTALLATION—The USG System of Sound Insulation in Fireproof Construction is sold and installed only by the United States Gypsum Company or its authorized erectors which assures undivided responsibility for the results. All work is installed by trained mechanics under strict supervision.

ITEMS FURNISHED and INSTALLED—The following items are furnished and installed in the USG System of Sound Insulation (See details, page 11).

Ceilings—Resilient Saddles, 1½-in. Channel Runners, Furring Runners, Rocklath, Thermofill.

NOTE—*We do not include plaster or hanger rods. Hanger rods should be furnished by others, 2 by 4-ft. centers with first hanger 6 in. from all walls.*

Walls—Resilient Wall Clips, Furring Runners, Rocklath, Cornerite.

NOTE—*We do not include tile walls or plaster.*

Floors—Resilient Sleeper Chairs with tie wire and grout, Metal Sleepers, Thermofill, Metal Ts, Rocklath, metal lath and concrete slab.

NOTE—*We do not include the finished flooring.*

SPACE REQUIRED—The space required for the installation of the USG System of Sound Insulation is as follows:

Ceiling—Not less than 6 in. to the bottom of Rocklath.

Walls—2⅛ in. from the face of tile wall to outside face of Rocklath.

Floor—5 in. from the top of the floor slab to the top of the concrete slab to receive flooring.

Specifications · SHORT FORM

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*This specification should be included under a separate heading of "Sound Insulation."*

(1) WORK INCLUDED

NOTE—*Here list and locate clearly the walls, floors and ceilings to be treated. Also indicate the following areas clearly on the plans:*

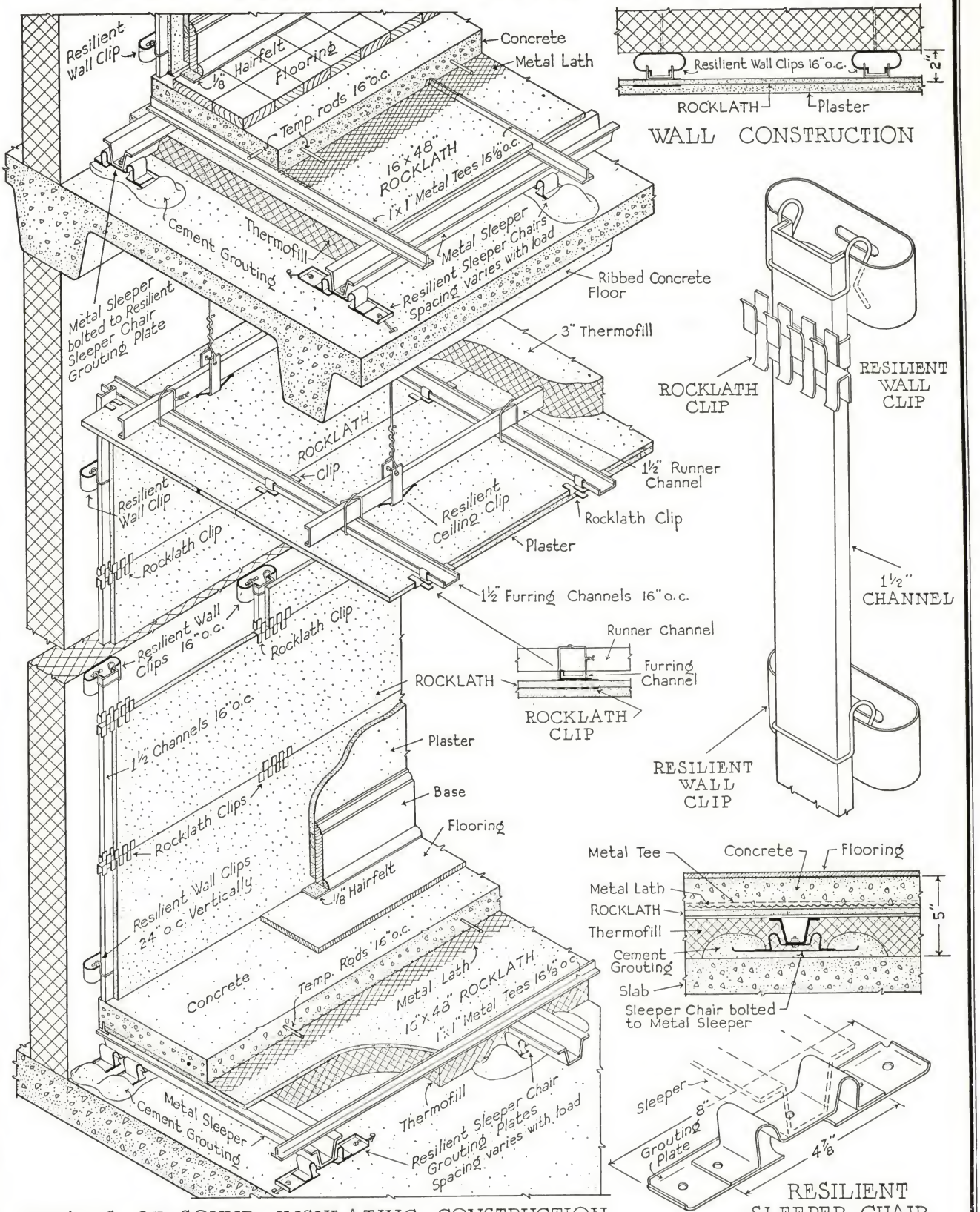
Indicate partitions by heavy black line on the side to be insulated. Indicate floors and ceilings on room schedules and by notations on floor plans and sections.

(2) SOUND INSULATION

The sound insulation as above listed and shown on plans shall be the USG System of Sound Insulation furnished and installed by the United States Gypsum Company, 300 West Adams Street, Chicago, Ill., or its authorized erectors.

*Trade-Mark

USG SYSTEM OF SOUND INSULATION



DETAILS OF SOUND INSULATING CONSTRUCTION FOR WALLS, FLOORS AND CEILINGS

RESILIENT SLEEPER CHAIR GROUTING PLATE

TREMBAR RESILIENT MACHINERY MOUNTINGS

• • •

DESCRIPTION

PURPOSE—To prevent the transmission of noise and vibration from motors, motor generators, ventilating equipment, printing presses, and many other types of machinery, all of which frequently produce annoyance through vibration or noise.

DESCRIPTION—Trembar* Sound Insulative Machine Base has been especially designed for use under machinery of all kinds to localize vibration and the resultant noise.

Its construction is essentially that of a rigid platform supported on very sensitive steel springs. These resilient springs float the machine so that practically none of its vibration is transmitted to the floor upon which the machine rests. The platform has no connection of any kind with the floor except through the resilient springs. The action of the springs in the base might be likened to those in an automobile which float the body of the car free from the vibration produced in the running gear by the road.

ADVANTAGES—Trembar Resilient Machinery Mountings possess the following advantages:

(1) Adaptability—Each base is especially designed and built for the piece of equipment to be supported. The major factors in determining the area of the base are the horizontal projections of the machine, the weight of the machine, the relative position of the center of gravity and the R.P.M. of the machine. The number and type of spring units are determined by the weight of the machine base and the R.P.M. of the machine. The base is adapted to the machine it carries.

(2) Economy—By the use of this base, equipment can be placed in that part of the building most desirable from the standpoint of efficiency and economy, without regard to the possibility of disturbances to adjacent rooms.

(3) Structures with Mixed Occupancy—Trembar Bases so fully free buildings from the vibration and noise produced by machinery that it is possible to include space for manufacturing in office buildings without causing the least annoyance to tenants.

(4) Hotels and Hospitals—The machinery necessary to the operation of these buildings may be quieted by the use of Trembar Mountings under all rotating or oscillating equipment.

(5) Installation—Bases are shipped ready for installation by others, or they will be installed complete by the Engineering Sales Division of the United States Gypsum Company or its authorized erectors.

DEMONSTRATED ACCOMPLISHMENTS—Trembar Vibration Isolating Equipment is in successful operation in the United States Navy, Coast Guard Vessels; Bureau of Standards; most of the newer broadcasting stations; and in many hotels, hospitals, apartments, office buildings, and factories. It is completely adaptable to practically any vibration problem.

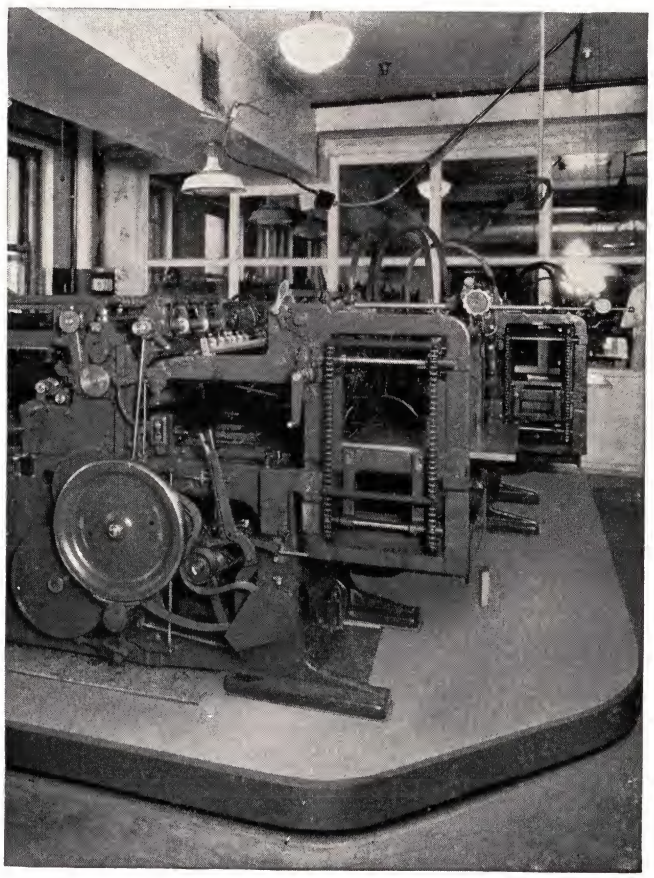
*Trade-Mark

Specifications

SHORT FORM

NOTE—*List under heading of "Sound Insulation."*

Under all **[name and describe items of equipment to be insulated]** the **[specify which]** contractor shall install Trembar Resilient Machinery Mountings as designed and manufactured by the United States Gypsum Company.



THE RED BOOK

USG

SALES OFFICES

Atlanta, Ga. . . . . 1440 Citizens and Southern Bank Bldg.
Baltimore, Md. . . . . Standard Oil Bldg.
Birmingham, Ala. . . . . 1203 Comer Bldg.
Boston, Mass. . . . . 731 Statler Office Bldg., 20 Providence St.
Buffalo, N. Y. . . . . 514 Brisbane Bldg.
Cincinnati, Ohio . . . . . 3012 Carew Tower
Cleveland, Ohio . . . . . 627-629 Hanna Bldg.
Dallas, Tex. . . . . 1301 Santa Fe Bldg.
Denver, Colo. . . . . Continental Oil Bldg.
Detroit, Mich. . . . . (At Mill) River Rouge, Mich.
Houston, Tex. . . . . 4616 Main St.
Indianapolis, Ind. . . . . 815 Architects' and Builders' Bldg.
Kansas City, Mo. . . . . 438 Ward Parkway
Los Angeles, Calif. . 507 Architects Bldg., 5th St. at Figueroa
Milwaukee, Wis. . . . . (At Mill) 439 W. Oregon St.
Minneapolis, Minn. . . . . 1308 Foshay Tower
New York, N. Y. . . . . 30 Rockefeller Plaza
Omaha, Neb. . . . . 312 Woodmen of the World Bldg.
Philadelphia, Pa. . . . . 1616 Walnut St.
Pittsburgh, Pa. . . . . 712 Grant Bldg.
Portland, Ore. . . . . 706 Spalding Bldg.
St. Louis, Mo. . . . . 806 Louderman Bldg.
San Francisco, Calif. . . . . 2501 Harrison St.
Washington, D. C. . Investment Bldg., 15th and K Sts., N. W.

Samson Plaster Board Company
Sales Agents for United States Gypsum Company
Crosby Building, Buffalo, N. Y.

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UNITED STATES GYPSUM COMPANY

IRVING HAMLIN

PATENTEE AND MANUFACTURER

The Evanston Sound Proof Door

TELEPHONE
Greenleaf 1975

1500 Lincoln Street, EVANSTON, ILL.

PRODUCTS

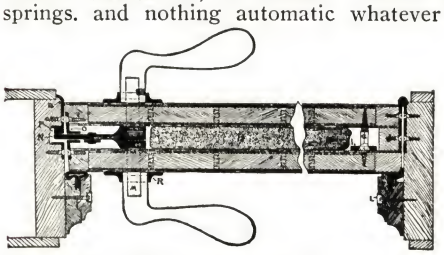
DOORS for RETARDING TRANSMISSION of SOUND:
The Evanston Sound Proof Door—one door to an opening.
The "Special" and the "High Duty" Doors for the more exacting acoustical conditions.
The "Modified Door" for Radio Broadcasting Studios.
Hamlin's Double Doors—two doors to an opening.
Hamlin's Sound Proof Sliding Doors where swinging doors are not desired.
HAMLIN FOLDING PARTITION—many doors to an opening.

EVANSTON SOUND PROOF DOOR

Construction

A sectional door containing sound-deadening and fireproofing elements and a mechanism for hermetrically sealing the cracks at top, bottom and two sides. The space between sections is ⅞ in., the insulation almost filling the space; but leaving some degree of "flappiness" and freedom of contact, thus avoiding "bridging." It extends almost the entire area of the door, as illustrated, and is composed of two sheets of asbestos millboard, with sheet steel suspended between them. Neither vegetable or animal quilting, nor asbestos "paper" are used. Part of the insulation is fastened to one section, and part to the other.

The mechanism which connects the handle with the movable cushion at the floor, and simultaneously wedging the door into its seat against the felt-mounted stops, is of steel, massive and strong, the pivotal connections being rivets and not bolts. The movable cushion at the bottom is of 1 in. or more cross section, same mushrooming under strong leverage by direct action upon the handle into a cross section ½x1½ in., as shown. There are no springs. and nothing automatic whatever about this door. This means that in over twenty years of business, and with thousands of the doors in use, no income has accrued from repairs or replacement of parts.



Ordinary doors shrink and swell. This door retains its virtues during winter and summer variations because it is purposely trimmed small enough so it will never stick in the frame, while the stops (1 in. thick and mounted with a generous fold of felt) at all times fill the cracks. The raised threshold shown is not necessary.

In the visible hardware there is no unsightly duplication or triplication of latching devices. In this door only one latch is necessary.

Made in any style of flush or panel. Each section is ⅞ in. thick, being a completely built-up core and veneer door. Panel doors have ⅛-in. veneers, while the flush are done in cross-banded veneers. Your own jambs are usable, but they should be strong and sturdy, and provided with three 5x5 butts. Jambs, for best appearance, ought to be at least 5½ in. across the face, flat and without rabbets, so as to accommodate the thick door and the felt-mounted stops. However, narrower stops, and even thinner doors can be furnished, if conditions so require.

Doors can be paired for openings up to 8 ft. wide. Sliding doors are furnished, either vertical or horizontal. Also doors combining X-ray-proofing with this self-same fireproofing and soundproofing. Metal covered doors also are furnished which, with the internal insulation described, offer very great protection from fire.

Send for the fully illustrated catalog. The illustrations show the door in cross section, with internal insulation of hair felt that has been discarded in favor of asbestos millboard and sheet steel in various combinations of alternate thicknesses. This is because acoustical engineers now know that mere mass and weight of the materials is a very important factor in retarding sound. The door as now offered is therefore of much higher efficiency than formerly.

For making estimates please state number and size of doors of each kind, the kind of wood, and indication of panels and moulding.

The Sub-Standard Door

Thickness 2⅝ in., internal space ⅞ in., occupied by hair felt and sheet steel. Weight 6 lbs. per sq. ft. or 123 lbs. exclusive of finish hardware, in a 3x7-ft. door. This for many years was the Standard Door of which thousands are in use and which made the world sound-proof-door-conscious. It is obsolete and is here mentioned for comparison with the later products.

The Standard Door

Thickness 2⅝ in., internal space ⅞ in., occupied by one thickness each of ¼ and ⅜-in. asbestos millboard and one sheet of 28-gauge steel. It will average 9 lbs. per sq. ft. or 175 lbs., exclusive of finish hardware, in a 3x7-ft. door. It was not tested, but estimated by the Director of Riverbank Laboratory to be of 32 decibels retardation.

The Special Door

Thickness 3 in., internal space 1¼ in., occupied by asbestos millboard and sheet steel. It weighs 11.6 lbs. per sq. ft. or 243 lbs. exclusive of the finish hardware in a 3x7-ft. door, and tested 35.6 decibels retardation at the Riverbank Laboratories.

The High Duty Door

Thickness 3 in., internal space 1¼ in., occupied by two sheets of 1/16-in. lead, two sheets of ¼-in. and one sheet of ⅜-in. asbestos millboard. It weighs 15.6 lbs. per sq. ft. or 326 lbs. exclusive of finish hardware, in a 3x7-ft. door.

In case of peepholes or glass panels, the glass is double in the Sub-Standard and the Standard Doors, and triple in the Special and High Duty Doors.

The Special and High Duty Doors at their hinge edges, besides the felt-mounted stops, are armed with a strip of thick felt 2 in. wide, partly embedded in the door, and under compression when door is closed.

Higher duty still may be accomplished, as there is ample room internally for heavier insulation.

The Modified Door

The Modified Door is designed for those situations where the user is protected by two doors instead of one, as in radio broadcasting, where entrance is gained through an intervening lobby having "acoustical correction" in its walls and ceiling.

Notable recent installations (1935-36-37) for the National Broadcasting Company and the Columbia Broadcasting System can be seen in their Chicago plants at Merchandise Mart and the Wrigley Building. *Send for the special circular.*

THE HAMLIN SOUND-RETARDING FOLDING PARTITION

In the Hamlin Folding Partition there was in 1924 the first attempt ever made to make folding partitions sound-retarding. The thorough methods already exhibited in the Evanston Sound Proof Door were adopted in conjunction with the very best sliding-folding hardware known. The Hamlin Folding Partition is offered confidently as being the ultimate in efficiency and thoroughness of sound-proofing methods, combined with sureness and permanency of adjustment and smoothness of operation.

For gymnasiums the common kinds are good enough; but for lecture rooms, class rooms and music rooms, a very high degree of sound retardation is necessary.

Kindly do not request estimate unless you have first examined the special catalog devoted to the Hamlin Folding Partition and are prepared to pay a higher price than for any others to which the terms "sound proof" or "sound retarding" are appended. Frankly—even the Hamlin kind still leaves something to be desired in sound retardation; and when you consider the hundreds of sq. ft. of vibrating surface and the hundreds of lin. ft. of cracks to be sealed, anything short of the most thorough sound-proofing is unwise, even at a higher price for the better kind.

Complete drawings are available. Doors are 3⅛ inches thick, invariably suspended from above and guided at the floor. Doors are hinged and folded in pairs, each pair sliding to the wall independently. However, they can be furnished in the "accordion door" manner if desired.

Send for the Hamlin Folding Partition Catalog.

HARDWOOD PRODUCTS CORPORATION

NEENAH, WISCONSIN

NEW YORK, N. Y., 1730-101 Park Avenue
ASHland 4-7594

CHICAGO, ILL., 1805-75 Wacker Drive
RANdolph 7230

EXCLUSIVE MANUFACTURERS OF THE RIVERBANK SOUND INSULATING DOOR

A Higher Degree of Sound Insulation

This door embodies results of an extensixe research by Dr. Paul E. Sabine at the Riverbank Laboratories, Geneva, Ill., and is fabricated and sold by the HARDWOOD PRODUCTS CORPORATION, Neenah, Wis. It is built according to approved modern door construction in order to give a higher degree of sound insulation than has hitherto been obtained even in doors of great weight and thickness—and at much reduced cost.

The Mechanics of Sound Transmission

Sound does not *Pass Through* a solid wall as light passes through glass, or water through a filter. A part of the vibrational energy of the incident sound wave is imparted to the door, setting up minute vibrations in its structure as a whole. These vibrations in turn impart vibrational energy or sound to the air on the outer side. Sound transmission is thus a purely mechanical problem. To reduce the transfer of energy from one face to the other of a dividing wall or door two things are necessary:

(1) Reduce the vibrational energy picked up from the sound wave by the face of the door.

(2) Reduce the transfer through the structure of what energy is picked up so that it will not set up waves from the opposite face into the space beyond.

The easiest way to get the first result is by increasing the mass (weight). The second means of reducing sound transmission, i.e., reducing the transfer of vibration between the faces of the door, is to structurally isolate the two faces.

Performance: 40 Decibel Reduction

The following are the measured sound reductions at various frequencies of the Riverbank door hung in the ordinary manner and closing against the special gasketed stops and with the automatic threshold closer.

Frequency	128	172	256	387	512	732	1024	2048	4000	Average
Reduction	40	36	40	36	39	38	39	42	57	40.7

In the accompanying graph are shown the results of similar tests made on doors of different construction and weights built for sound insulating purposes. Note that in these doors, weight is the important factor in sound reduction as shown by the fact that the plotted values fall very close to a straight line. The Riverbank door is shown on the same graph, and the acoustic merit of its design is shown by the fact that with decidedly less weight (168 lbs.) the sound insulation is greater than that of the heaviest doors (336 lbs.).

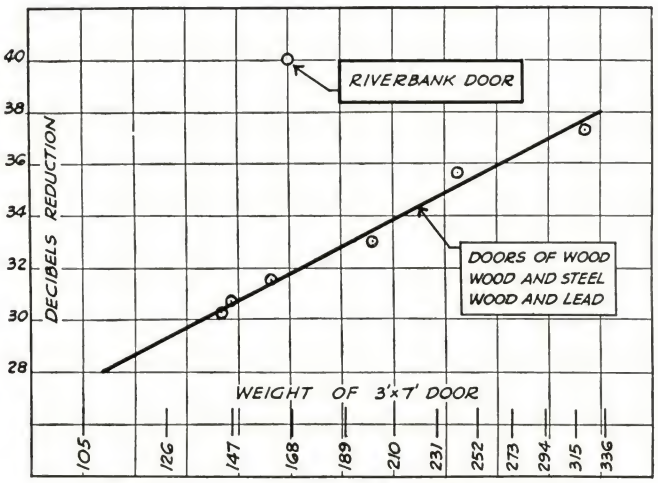
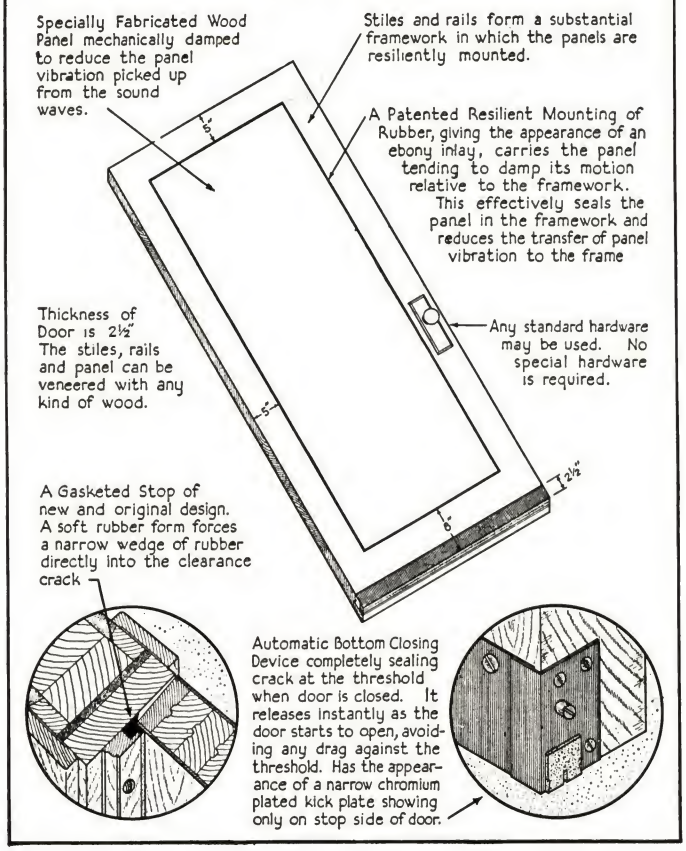
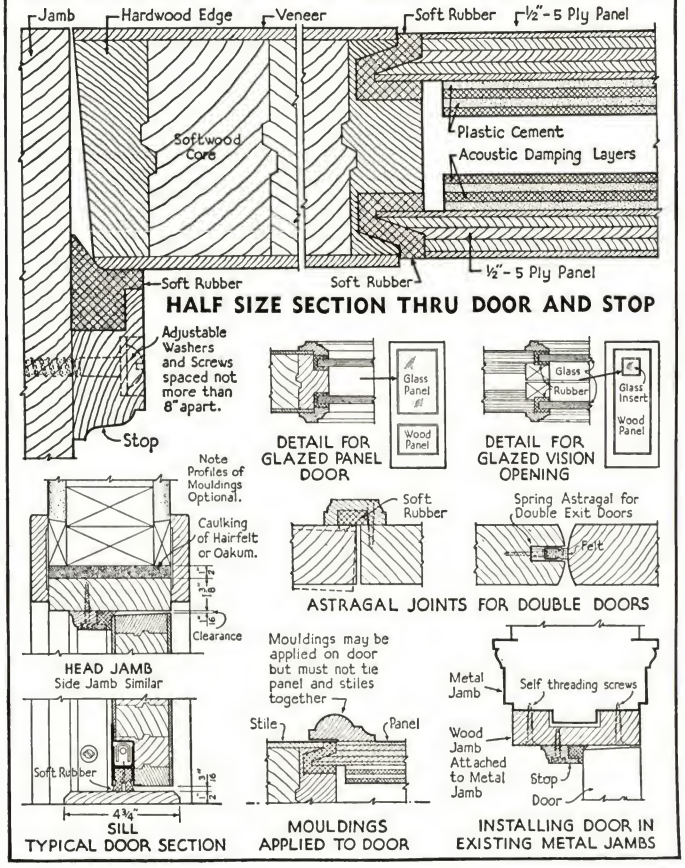


Chart of Weights and Average Reduction in Decibels

DETAILS OF RIVERBANK SOUND INSULATING DOOR



DETAILS OF RIVERBANK SOUND INSULATING DOOR



THE KORFUND CO., INC.

Manufacturers of Vibration Isolation and Soundproofing Materials

4813 Thirty-second Place, LONG ISLAND CITY, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

KORFUND ANTI-VIBRATION PRODUCTS

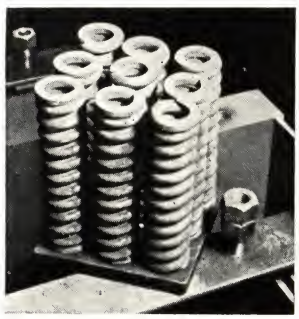
Korfund Anti-Vibration Products fall under two heads — *Korfund Vibro-Dampers,* utilizing Steel Springs, and *Korfund Isolators,* utilizing organic materials, particularly natural cork and rubber products. Local conditions determine the application of the one or the other, and both products may be applied directly to the machine to be isolated or to the foundation upon which the machine rests. There are various types of Korfund Vibro-Dampers to meet varying conditions. Korfund Isolators fall into two main divisions—Seismo-Dampers and Cork Plates.

Korfund Vibro-Dampers

Steel springs of the correct stiffness, hardness and dimensions may be adapted to practically all types of installations since their elastic qualities can be accurately predetermined and controlled. The scope of their application is almost unlimited. In the Korfund Vibro-Damper the steel spring assembly is so constructed as to make it critically adjustable both before and after installation. The springs are combined to cover loading ranges from 50 to 25,000 lbs. Korfund springs have a higher loading efficiency per pound of spring material than other types of springs often used. Korfund Vibro-Dampers provide isolating efficiencies approaching 100%. They are designed according to scientific principles and the results of over thirty years' experience in the study and application of vibration isolation methods.

Korfund Organic Material Isolators

Natural cork has structural strength sufficient to support loads far in excess of any which it may be called upon to support. It has much resilience that it can effectively isolate a wide range of machinery, if the operating frequency is not too low. It may be compressed to a fraction of its original volume and yet return nearly to its original shape after the pressure is removed. It has a definite time lag which prevents a pulsating action in the machine which it supports. Oil and water have no effect other than to preserve the natural resiliency of the cork. Korfund Natural Cork in Seismo-Dampers or in Cork Plates is an effective, permanent and economical material for vibration isolation. Rubber and synthetic rubber products are frequently used by Korfund Engineers when conditions call for their use.



An assembly of the specially processed steel springs typical of those used in the various types of Korfund Vibro-Dampers.

Information Required for Korfund Recommendations

It is always more satisfactory to submit isolation problems to Korfund Engineers. In this way efficiency is assured through correct choice of the isolating media and scientific planning of the installation. Please send the following basic information:

(1) Type of machine — manufacturer.
(2) New or existing installation.
(3) Weight—its distribution.
(4) Speed (revolutions per minute).
(5) Horsepower or impact load.
(6) Unbalanced forces and moments.
(7) Description of drive.
(8) Type of floor or foundation.
(9) Dimensions of foundation.
(10) Sketch of machine base with dimensions.

With the above information Korfund Engineers can promptly provide recommendations and approximate costs of entire isolation. No obligation.

Workmen lining pit with Korfund Natural Cork Plates, preparatory to pouring of concrete foundation block for heavy machine, which is then completely isolated from the surrounding structure.

KORFUND SOUNDPROOFING MATERIALS

The Korfund Company, Inc., also manufactures two highly efficient soundproofing materials, *Absorbit* — for walls, and *Absorbophone*—for floors.

Absorbit consists of sheets of fibrous material impregnated with asphalt and laminated together so as to form staggered air spaces. Sheets are 24 x 48 in., ¾ in. thick, easily cut with a hand saw.

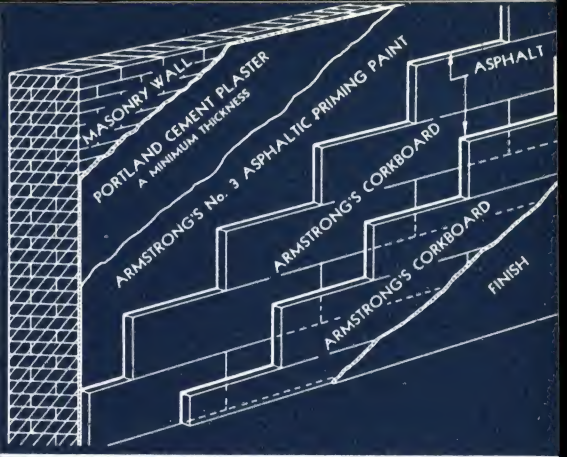
Absorbophone being installed in music rooms of New York University.

Absorbophone plates consist of frame of cork with a filler of a resilient material of low density. Entire plate is coated with asphaltum and bound with asphalt felt. Absorbophone plates are 24 x 37 x 1 in., easily cut with a hand saw.

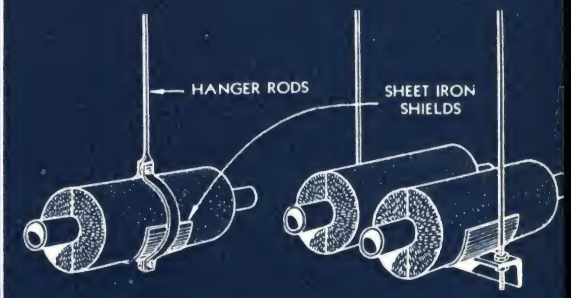
MEMORANDA

ARMSTRONG'S INSULATION AND INTERIOR FINISHES

ARMSTRONG CORK

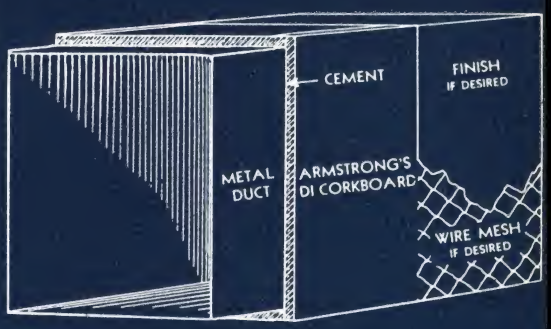


CORKBOARD

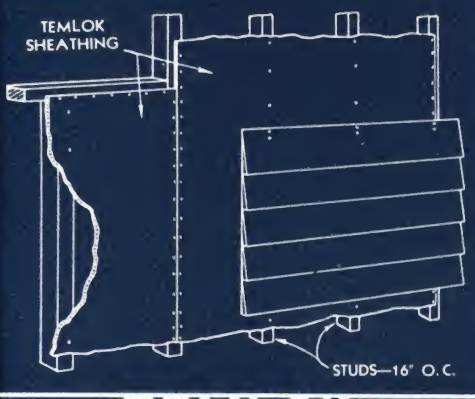


STRAP HANGER TRAPEZE HANGER

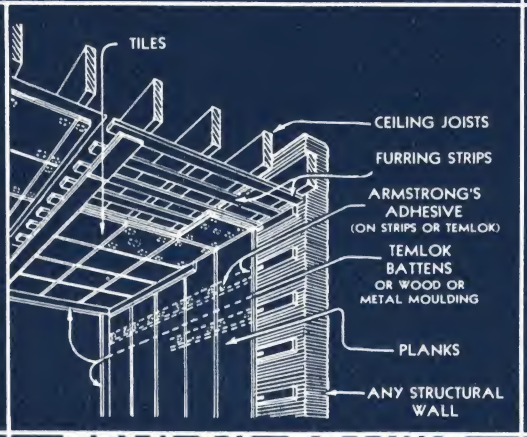
CORK COVERING



DI CORKBOARD



TEMLOK



TEMLOK DE LUXE

VIBRACORK

ARMSTRONG CORK PRODUCTS COMPANY

BUILDING MATERIALS DIVISION . . . . LANCASTER, PENNSYLVANIA

Armstrong—the Company

Its Products and Its Services to Architects and Builders

IN any manufactured product, quality is the result not only of the process of manufacture, but also of experience, skill, and care all the way from the selection of the raw material to the delivery of the finished product.

Armstrong is the oldest manufacturer of corkboard insulation in this country. The Company also is widely known to builders as the manufacturer of Armstrong's Linoleum. The Company's broad experience, superior manufacturing facilities and ability, strict adherence to high standards of quality, engineering service, and constant research assure complete dependability of its building products.

Armstrong's Insulation Products

ARMSTRONG'S CORKBOARD INSULATION
For walls, roofs, and ducts—pages 3 and 4
For refrigerated rooms and buildings—pages 5, 6, and 7.
ARMSTRONG'S CORK COVERING
For refrigerated lines—pages 8 and 9
ARMSTRONG'S VIBRACORK
For the isolation of rotating and reciprocating machinery—page 10
ARMSTRONG'S TEMLOK INSULATION
Insulating Board and Lath—pages 11 and 12
Temlok De Luxe Insulating Interior Finishes—pages 13 and 14
Temlok Roof Insulation—page 15
ARMSTRONG'S CORKOUSTIC AND TEMCOUSTIC FOR ACOUSTICAL TREATMENT AND INTERIOR FINISH (See File Index.)

Acoustical Products

For information on Armstrong's Corkoustic and Temcoustic for acoustical treatment and interior finish, see File Index.

Architectural Service Bureau

Armstrong's Architectural Service Bureau is maintained at the Company's main offices, Lancaster, Pa., to provide architects and engineers with technical information relating to Armstrong's Insulation products.

Complete testing laboratories are also maintained at Lancaster. Any special insulation, acoustical, or vibration problems may be referred here.

Literature

Only brief information on the various Armstrong's Insulation products and their application appears in this catalog. You are invited to write to the ARMSTRONG CORK PRODUCTS COMPANY, Lancaster, Pa., or get in touch with a near-by office or distributor (see list on back cover), for copies of any of the catalogs listed below.

Armstrong's Corkboard Insulation for Cold Storage Rooms

Armstrong's Corkboard Insulation for Walls and Roofs

Armstrong's Cork Covering for All Cold Lines

Armstrong's Insulation Sundries

Armstrong's Temlok Building Insulation—Specification Book

Armstrong's Temlok Roof Insulation—Specification Book

How to Lessen Vibration with Armstrong's Vibracork

Decorative Walls and Ceilings That Quiet Noise . . . Correct Acoustics

Specifications for Installing Armstrong's Acoustical Tiles

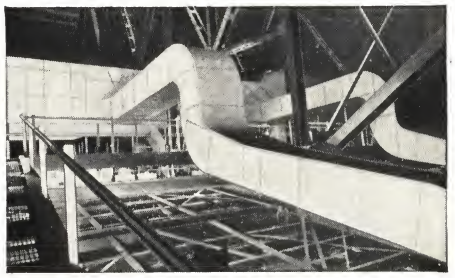
How to Reduce Noise or Improve Hearing Conditions

Right: Applying Armstrong's Corkboard Insulation to air conditioning duct. Corkboard is easily cut and shaped and conforms readily to curved surfaces.

ARMSTRONG'S CORKBOARD INSULATION for Walls, Roofs, and Ducts

Armstrong's Corkboard Insulation, illustrating the texture of the surface.

Applying corkboard insulation on a factory roof to prevent condensation on ceiling below.



Air conditioning ducts in the St. Louis Municipal Auditorium, insulated with corkboard.

Physical Characteristics of Corkboard

Armstrong's Corkboard Insulation is made from pure cork ground into medium coarse granules, cleaned, compressed and then bonded and sterilized by heat without the use of any foreign binder to form solid slabs of standard thicknesses and dimensions (see below). This baking process produces a tough, strong, homogeneous board that is inherently resistant to moisture, fire, and decay.

Thermal conductivity of Armstrong's Corkboard is .27 (B.t.u. per hr. per 1″ thickness per degree R.) at 60° F. mean temperature. (*) Its corresponding resistivity is 3.70. As with all insulating materials, the thickness of corkboard necessary for effectiveness in preventing heat losses and condensation varies with the type of construction and conditions under which it is used.

Moisture and Fire-Resistance. Inherently non-absorbent because its minute individual cells are naturally sealed, Armstrong's Corkboard is highly resistant to the effects of the water and air-borne vapor that are always present in insulation service. It meets the rigid standards of Federal Specification for Compressed Cork MM-C-561 and maintains insulating efficiency without disintegrating.

When exposed to flames, surface charring is produced which checks the spread of fire. Combustion ceases when the flame is removed. Armstrong's Corkboard cannot take fire from sparks or embers.

Strength and Stability. The high strength, stability, and long life of Armstrong's Corkboard are indicated by laboratory tests and by actual performance in the field, the material lasting in many cases for more than thirty years.

Plaster applied directly on corkboard takes a strong bond and in addition keys to it mechanically.

Workability. Armstrong's Corkboard can be nailed in place or erected in portland cement mortar, asphalt, or other adhesives. The material weighs .6 lb. per board ft., is convenient to handle, and can be cut, shaped, or sanded as required.

Cost and Uses

Armstrong's Corkboard is a building insulation material of high quality and durability. It may serve also as a plaster base, or, in modern decoration, as an interior finish, thus performing two functions at one cost.

Recommended uses include: *(1) Roof deck insulation,* particularly under built-up roofing to prevent condensation, conserve heat or to reduce cooling costs. *(2) Floor and sidewall insulation* applied direct to masonry where no hydrostatic pressure exists. Masonry must be waterproofed. Particularly effective for eliminating surface condensation. *(3) Sidewall and attic insulation* in new or existing buildings where high quality, long life insulation is indicated. *(4) Air conditioning duct work insulation* applied direct to metal ducts to reduce heating losses and cooling loads and to prevent condensation. *(5) Low temperature room insulation,* such as wine and fur storage vaults, refrigerators, cold storage rooms, etc. Send for special data on low temperature room insulation practices.

A special form of corkboard, Armstrong's Corkoustic, is available for sound deadening. Another form, Armstrong's Vibracork, lessens the transmission of vibration. Request special information.

Armstrong's Cork in other forms is also used for low temperature pipe coverings and other similar purposes. See T-S.S. M4.4.1.

Cost of Armstrong's Corkboard is soon repaid through reduction in heating and cooling loads and gain in comfort. The use of Armstrong's Corkboard is indicated in enduring construction and high quality buildings, and wherever service conditions are severe.

Sizes

Armstrong's Corkboard is made in the following standard sizes and thicknesses. Special sizes and shapes on order.

Lengths and Widths: 12″ x 32″; 12″ x 36″; 18″ x 36″; 24″ x 36″; 36″ x 36″.

Thicknesses: 1″; 1½″; 2″; 3″; 4″; 6″.

Thicknesses Required

Overall transmission of heat through a complete wall, roof, or floor area is the factor which governs heating and cooling costs and surface condensation. The designer must determine the maximum permissible rate of heat transfer according to local climatic conditions and the cost of fuel and power.

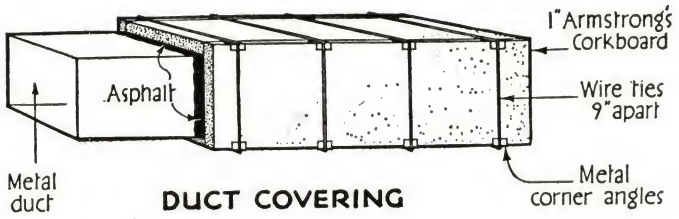
Any selected construction can then be calculated for its heat transmission, uninsulated, and again calculated with various thicknesses of Armstrong's Corkboard until the amount required to reduce overall transmission to the established value has been found. Methods of making these simple calculations will be found in T-S.S. M1.1.1. Heat transmission of typical building sections is given in T-S.S. M1.1.2 but since the rating of corkboard has been reduced from .30 to .27, the values shown under "Blanket or Flexible" insulation (k = .27) may now be followed.

Where to Buy

Armstrong Corkboard can be purchased direct from Armstrong branch offices or distributors in all principal cities. Consult telephone directory. Usually installed by building contractor or subcontractor when used for insulation but when desired, the Armstrong Cork Products Company or its agents will contract to furnish and erect corkboard insulation.

(*) Average of independent identical tests conducted under auspices of the Cork Institute of America by Pittsburgh Testing Laboratories and Pennsylvania State College. See "Low Temperature Insulation" published by Cork Institute of America. Formerly rated at .30 as in A.S.H.V.E. Guides, based on earlier tests at 90° F.

ARMSTRONG'S CORKBOARD INSULATION for Walls, Roofs, and Ducts



DUCT COVERING

Application Methods

General. Armstrong's Corkboard Insulation can be applied to frame or masonry walls, to wood, concrete, and steel surfaces of flat or pitched roof decks and to exterior surfaces of metal ducts. Boards should be butted tightly and joints broken in successive rows. When installing multiple layers of corkboard each layer should break joint with that beneath.

Insulation should run continuously over surfaces and should be carefully fitted between obstructions such as joists and rafters.

Concrete or Steel Roof Decks. Lay corkboard directly in a hot mopping of asphalt or pitch or over a 2-ply waterproofing course. Cutoffs of two plies of waterproofing fabric should be applied every 25 feet to overlap the corkboard at least 4" and extend at least 6" on the roof deck. Roofing can be any approved built-up type. Apply roofing as soon as insulation is in place.

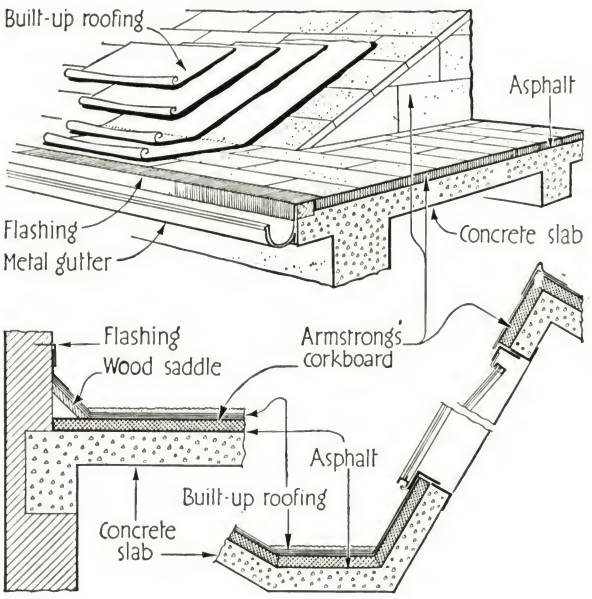
Wood Roof Decks. On flat decks apply corkboard preferably with hot asphalt or pitch over a waterproofing course consisting of one layer of resin-sized sheathing and two plies of tarred felt. Built-up roofing of any suitable type can cover the insulation. On pitched roofs, apply corkboard to underside of rafters if practicable. Otherwise nail over sheathing and apply layer of waterproofing felt over the corkboard. With thicknesses not over 1", shingles, slate or tile roofing may be nailed to roof through the corkboard. With greater thicknesses, nailing strips should be applied over the insulation.

Metal ducts must be thoroughly cleaned. Dip corkboard in hot asphalt, apply to duct and support it in place with bands or wires tightly drawn around sheet metal corner angles on 9" centers. When required, exposed surfaces may be finished with portland cement plaster or plastic asphalt, such as Armstrong's Asphaltic Plastic Finishes.

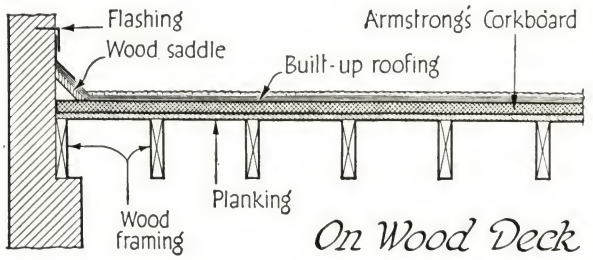
Masonry Walls. Anchor grounds permanently to masonry by standard attachments (expansion bolts, wall plugs, etc.) so that ground faces are flush with corkboard surface. Set conduits flush into walls to prevent cutting out corkboard. Set plumbing and electrical outlets and detail window and door frames in accordance with extra wall thickness due to insulation. Masonry surfaces should be prepared for bonding with cement mortar and should be dampened as required to reduce absorption. Apply ½" stiff portland cement mortar (1 cement to 2 sand) to back of corkboard. Spread mortar evenly, keeping edges and face absolutely clean. Use no mortar in joints. Set butted corkboards against prepared surface and press into place. Finish the exposed surface of the corkboard in accordance with plastering specifications, applying plaster directly on the corkboard.

Frame Construction. In new work nail corkboard to inside face of studs and rafters, spanning two studs with each sheet. Use nails 1" longer than thickness of corkboard, 3 nails to each support. In modernization work or in new work, the insulation can be nailed over sheathing on the exterior of walls and roofs. For stucco finishes cover corkboard with waterproof paper. Apply portland cement stucco on furred or self-furring metal lath nailed through furring and corkboard to sheathing.

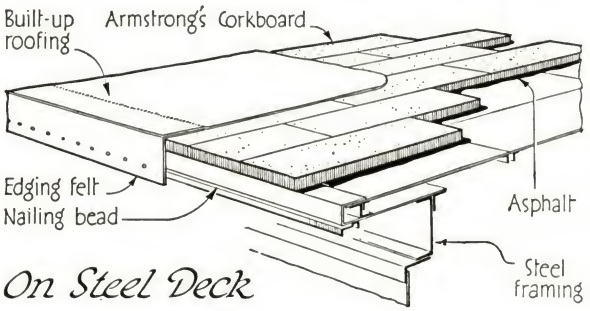
For insulating top-story ceilings, corkboard is normally applied to underside of joists and used as a plaster base. In modernizing it can be secured to top of joists.



On Concrete Slabs



On Wood Deck



On Steel Deck

TYPICAL ROOF APPLICATIONS

STOCK SIZES

Special sizes and thicknesses are available on order

LENGTHS *and* **WIDTHS**

12" x 32" 12" x 36" 18" x 36"
24" x 36" 36" x 36"

THICKNESSES

1" 1½" 2" 3" 4" 6"

ARMSTRONG'S CORKBOARD INSULATION for Cold Storage

General

1. Back Plaster—Where the corkboard insulation is to be applied against masonry walls in asphalt, the walls must be made true and even with portland cement plaster, mixed in the proportions of 1 part portland cement, 3 parts clean, sharp sand, and 5% hydrated lime.

Immediately preceding the application of the plaster, wet the walls evenly with clean water. Apply the plaster in one or more coats to ¼″ minimum thickness on all high points and straighten with a straightedge and float it smooth.

Where necessary, the wall surfaces must be roughened or hacked before applying the plaster to insure a good bond.

2. Asphalt Priming Paint—All brick, concrete, or plastered surfaces to which the corkboard insulation is to be applied in asphalt must be primed with two (2) coats of Armstrong's No. 3 Asphalt Priming Paint, applied with either brush or spray. The surfaces must be thoroughly dry before the priming paint is applied, and the first coat of paint must be allowed to dry before the second coat is applied.

Walls

1. Masonry Walls—Two Layers of Corkboard—First Layer Applied in Cement Mortar; Second Layer Applied in Asphalt—All masonry wall must be thoroughly cleaned of dirt, dust, loose mortar, etc., and where necessary, roughened or hacked to insure a good bond.

Apply the first layer of Armstrong's Corkboard in a ½″ bed of portland cement mortar, mixed 1 part portland cement, and 3 parts clean, sharp sand.

Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For a single layer of corkboard apply as described above for first layer.

2. Masonry Walls—Two Layers of Corkboard—Both Layers Applied in Asphalt—All masonry wall surfaces must be thoroughly cleaned of dirt, dust, loose mortar, etc., and, where necessary, be made true and even as described under "Back Plaster."

After the plaster has dried, prime the wall with two coats of Armstrong's No. 3 Asphalt Priming Paint, as described under "Asphalt Priming Paint."

Apply the first layer of Armstrong's Corkboard directly to this surface in hot asphalt. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For a single layer of corkboard apply as described above for first layer.

3. Wood Walls—Two Layers of Corkboard—Both Layers Applied in Asphalt—Directly against the sheathing of the wood walls tack one layer of Armstrong's Asphalt Sheeting or waterproof insulating paper with the edges lapped not less than 3″.

Apply the first layer of Armstrong's Corkboard in hot asphalt and secure it to the wood wall with special galvanized nails of proper length. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: Where only one layer of corkboard is used, apply it as described above for the first layer.

4. Solid Cork Partitions—Two Layers of Corkboard—Asphalt or Cement Core—Erect temporary 2 x 4 studs on 18″ centers in alignment as a guide for the self-supporting solid cork partitions. Erect the first layer of Armstrong's Corkboard on edge against the temporary studs. Securely toenail each corkboard to the abutting one, and wherever possible, also to the walls, floor, and ceiling with special galvanized nails of the proper length. All joints must be tight and all vertical joints must be broken.

(a) Erect the second layer against the first one in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of the proper length; or

(b) Erect the second layer against the first one in a ½″ bed of portland cement mortar, mixed 1 part portland cement, and 3 parts clean, sharp sand, and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length.

All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes." Do not remove the temporary studs until the opposite side of the solid cork partition has been finished.

Note: For single layer of corkboard apply as described above for first layer.

Ceilings

1. Concrete—Two Layers of Corkboard—First Layer Applied in Cement Mortar; Second Layer Applied in Asphalt—The concrete ceiling must be thoroughly cleaned of dirt, dust, loose mortar, etc., and be roughened or hacked to insure a good bond.

Apply the first layer of Armstrong's Corkboard in a ½″ bed of portland cement mortar, mixed 1 part portland cement, and 2 parts clean, sharp sand and prop it in place until securely bonded to the concrete ceiling slab. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For single layer of corkboard apply as described above for first layer.

2. Concrete—Two Layers of Corkboard—Both Layers Applied in Asphalt—Before any insulation is applied to the ceiling, fasten to the under side of the concrete ceiling slab 1⅝″ x —(thickness of first layer of corkboard) sleepers with suitable anchors. The anchors and sleepers must be spaced so that the corkboard will fit tightly between, but not greater than 18″ apart.

The concrete ceiling slab must be thoroughly cleaned of all dirt, dust, loose plaster, etc., and be primed as described under "Asphalt Priming Paint."

Apply the first layer of Armstrong's Corkboard in hot asphalt between the sleepers and temporarily prop it to insure a good bond and toenail it to the sleepers with special galvanized nails. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. Where the second layer crosses the sleepers, nail it with special galvanized nails at each sleeper. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For single layer of corkboard apply as described above for first layer.

3. Wood—Two Layers of Corkboard—Both Layers Applied in Hot Asphalt—Directly against the under side of the wood ceiling, tack one layer of Armstrong's Asphalt Sheeting or waterproof insulating paper with edges lapped not less than 3″.

Apply the first layer of Armstrong's Corkboard in hot asphalt and secure it to the wood ceiling with special galvanized nails. Apply the second layer in hot asphalt and additionally secure it to

ARMSTRONG'S CORKBOARD INSULATION for Cold Storage (continued)

the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For single layer of corkboard apply as described above for first layer.

4. Tee-Iron Construction—Two Layers of Corkboard—First Layer Laid Between Tee-Irons; Second Applied Beneath in Asphalt—Space the tee-irons 12″ or 18″ apart and securely fasten them at the ends to the walls or other supporting structure. Place the first layer of Armstrong's Corkboard between the tee-irons, notching the edges so that it snugly fits the flanges of the tee-irons. Flood the top surface with a heavy coat of hot asphalt and apply a ½″ or ¾″ coat of portland cement mortar mixed 1 part portland cement, and 3 parts clean, sharp sand, and screeded off smooth.

Apply the second layer against the under side of the first layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

5. Wood—(Insulation on Top)—Two Layers of Corkboard—Both Layers Applied in Hot Asphalt—A slot one inch (1″) wider than the thickness of the wall insulation must be provided along all walls so that the wall and ceiling insulation will join.

On top of the wood ceiling structure lay one layer of waterproof insulating paper with the edges lapped at least 3″ and sealed with hot asphalt. Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt. All joints must be tight and the joints of the successive layers broken with respect to each other.

Flood the top surface of the insulation with a heavy coat of hot asphalt; or mop the top surface with hot asphalt and lay one layer of fifteen (15) pound saturated roofing felt in hot asphalt with all edges lapped and sealed. Tightly seal this membrane along all walls.

Note: (1) For single layer of corkboard apply as described above for first layer.

(2) Construction often used for roofs. The top surface is left uncoated to receive roofing membrane.

6. Steel Roof Deck—(Insulation on Top)—Two Layers of Corkboard—Both Layers Applied in Hot Asphalt—A slot one inch (1″) wider than the thickness of the wall insulation must be provided along all walls so that the wall and ceiling insulation will join.

Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt. All joints must be tight and the joints of the successive layers broken in respect to each other.

Flood the top surface of the insulation with a heavy coat of hot asphalt and apply ½″ or ¾″ coat of portland cement mortar mixed 1 part portland cement and 3 parts clean, sharp sand, and screeded off smooth; or mop the top surface with hot asphalt and lay one layer of fifteen (15) pound saturated roofing felt in hot asphalt with all edges lapped and sealed. Tightly seal this membrane along all walls.

Note: (1) When only one layer of corkboard is used, apply it as described above for first layer.

(2) This construction is quite often used for roofs. In such cases the top surface of the insulation is usually left uncoated to receive the built-up roofing membrane.

Floors

1. Concrete Base—Two Courses of Corkboard—Both Layers Laid in Asphalt—The concrete base or floor on which the insulation is to be laid must be reasonably smooth and level. Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt. After cork dust has been swept in all joints, flood the top surface heavily with hot asphalt; or, apply a waterproofing membrane consisting of two layers of fifteen (15) pound saturated roofing felt, each layer being mopped in place with hot asphalt and flash this membrane up nine (9) inches high and seal it along all walls and around all columns.

On top of this insulation install a wearing floor as described under "Concrete Wearing Floors."

Note: For single layer of corkboard apply as described above for first layer.

2. Wood Base—Two Layers of Corkboard—Both Layers Laid in Asphalt—On top of the wood base or floor, apply one layer of Armstrong's Asphalt Sheeting or waterproof insulating paper with all edges lapped not less than 3″ and sealed with asphalt.

Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt. All joints must be tight and the joints of the successive layers broken with respect to each other. After cork dust has been swept in all joints, flood the top surface heavily with hot asphalt; or, apply a waterproofing membrane consisting of two layers of Armstrong's Asphalt Sheeting or two layers of fifteen (15) pound saturated roofing felt, each layer being mopped in place with hot asphalt, and flash this membrane up nine (9) inches high and seal it along all walls and around all columns.

On top of the insulation install a wearing floor as described under "Concrete Wearing Floors."

Note: For single layer of corkboard apply as described above for first layer.

Columns

1. Square Concrete Columns—Two Layers of Corkboard—Both Layers Applied in Asphalt—Prime the square concrete columns with Armstrong's No. 3 Asphalt Priming Paint, as described under "Asphalt Priming Paint."

Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of the proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

All vertical corners must be protected with suitable angle corner guards 4″–6″ high, securely fastened to the column before the finish is applied.

Finish the exposed cork surfaces as described under "Finishes."

Note: Where only one layer of corkboard is used, apply it as described above for first layer.

2. Round Concrete Columns—One Layer Cork Lags—Applied in Asphalt—Prime the round concrete columns with Armstrong's No. 3 Asphalt Priming Paint, as described under "Asphalt Priming Paint."

Apply the cork lags, properly beveled to fit the column, in hot asphalt, and toenail each cork lag to the abutting one with treated wood skewers or special galvanized nails of proper length. All joints must be tight. Smooth off any rough edges or corners.

Where necessary to protect the insulation, install a sheet metal column guard 4″–6″ high, securely fastened to the column before the finish is applied.

Finish the exposed cork surfaces as described under "Finishes."

Finishes

1. Asphalt Plastic Finish—Finish the exposed cork surfaces (walls, ceilings, columns, solid cork partitions, etc.) with Armstrong's Asphalt Plastic Finish. The mixture for the finish consists of 50 gallons Armstrong's Asphalt Emulsion, 175 pounds asbestos floats, 275 pounds (2¾ cubic feet) dry, screened sand, 15 gallons clean water.

These ingredients are thoroughly mixed together until uniform in color throughout. Use only the smallest quantity of water necessary to give the proper troweling consistency. Apply this mixture directly to the corkboard surfaces in two coats, each approximately one-eighth (⅛) inch in thickness. Before applying the first coat all voids, open joints, or broken corners must be pointed up with this mixture. The first coat must be hand dry before the second coat is applied. Trowel the second coat smooth. The final thickness of the finish must be approximately ⅛″ when dry. Finish all corners true and clean.

The finish must be thoroughly dry before any paint is applied, to guard against cracking.

ARMSTRONG'S CORKBOARD INSULATION for Cold Storage (continued)

Note: Asphalt plastic finish should not be applied when the temperature is below 40° F. In cold weather provide heat to warm the spaces where the finish is being applied.

2. Portland Cement Plaster—Finish the exposed cork surfaces (walls, ceilings, columns, solid cork partitions, etc.) with portland cement plaster. The portland cement plaster is mixed in the proportions 1 part portland cement, 2 parts clean, screened sand, and 8% hydrated lime, and is applied in two coats, each approximately one-quarter (¼) inch in thickness.

The first coat must be keyed thoroughly to the insulation and scratched in two directions and allowed to dry before the application of the second coat. The second coat is brought to an even surface by means of a straightedge and troweled or floated smooth without ridges or blemishes of any kind.

To reduce cracking to a minimum, after the plaster has hardened somewhat, score into squares of approximately 4'–0" each way, using a tool that will cut a clean groove through the finish to the first coat.

Protect all salient vertical corners with expanded metal corner beads, fastened securely in place before the plaster finish is applied. All other corners must be true and clean, either square or coved to a ¾" radius.

Note: The portland cement plaster can be strengthened and cracking of the finish minimized by reinforcing the plaster with galvanized metal lath or galvanized wire netting, securely fastened to the surface of the insulation with 1¼" galvanized staples or short, large-headed nails before the plaster is applied.

3. Armstrong's Mastic Finish—Finish the exposed cork surfaces (walls, ceilings, columns, solid cork partitions, etc.) with Armstrong's Mastic Finish approximately ⅛" thick and ironed on the corkboard at the factory. After the boards are in place, fill and seal the joints and nail heads with mastic seam filler in a neat and workmanlike manner.

Finish all convex corners with Armstrong's Mastic Finish Quarter Round.

4. Paint—a. *Armstrong's Cold Storage Paint*—The finish (asphalt plastic finish, portland cement plaster, or Armstrong's Mastic Finish) must be thoroughly dry and clean of loose mortar, dirt, and grease. Apply two coats of Armstrong's Cold Storage Paint, flowing on each coat. Allow at least twenty-four hours between the application of the two coats for drying.

Note: On portland cement plaster or concrete a third coat may be required to cover.

b. *Aluminum Paint*—The finish (asphalt plastic finish, portland cement plaster, or Armstrong's Mastic Finish) must be thoroughly dry and clean of dirt, loose plaster, and grease. Apply two coats of aluminum paint, flowing on each coat, and allow the first coat to dry before the second coat is applied. The aluminum paint must not be mixed until it is to be used.

Note: Not all aluminum paints are suitable for application over finishes in cold storage rooms. Use only aluminum paints known to be satisfactory and specifically recommended for this purpose.

Concrete Wearing Floors

1. Monolithic Concrete Floor—Install a monolithic concrete wearing floor over the floor insulation three (3) inches thick at the low point and sloping one (1) inch in ten (10) feet. The concrete shall be mixed 1 part portland cement, 2 parts clean, sharp sand, and 3 parts crushed stone, and only wet enough to flush readily under slight tamping. The concrete must be handled rapidly after mixing, tamped to a compact mass and struck off at the proper level or slope as determined by previously set screeds.

Cover the floor to a 1" radius along all walls and around all columns.

After the concrete has hardened somewhat, but is still workable, float it so as to thoroughly compact it and provide a surface free from defects and blemishes and trowel smooth with a steel trowel. Protect the floor for several days after being laid until the concrete has hardened.

2. Two-Course Concrete Floor—Over the floor insulation install a two-course concrete wearing floor three (3) inches thick at the low point and sloped one (1) inch in ten (10) feet. Mix the concrete base 1 part portland cement, 3 parts clean, sharp sand, and 5 parts crushed stone, and only wet enough to flush readily after slight tamping. The concrete must be handled rapidly after mixing, tamped to a compact mass and struck off at the proper level or slope as determined by previously set screeds.

Install the wearing course one (1) inch in thickness and mixed 1 part portland cement to 2 parts clean, sharp sand, before the concrete base has hardened. Float the wearing course in a manner that will thoroughly compact it and remove any defects or blemishes and then trowel smooth with a steel trowel. Cover the wearing course to a 1" radius along all walls and around all columns. Protect the floor for several days after being laid until the concrete has hardened.

Tanks—Freezing and Brine Storage

1. Two Courses of Corkboard on the Bottom and Granulated Cork on Sides, Wood Finish—*Bottom.* Apply the first layer of Armstrong's Corkboard on top of the concrete or wood base in hot asphalt. Apply the second layer in hot asphalt. All joints must be tight and the joints of the successive layers broken with respect to each other. Flood the top surface of the insulation heavily with hot asphalt. The insulation must extend to the outside of the insulation on the sides of the tank.

Sides. Construct retaining walls 10" or 12" away from the tank sides, consisting of 2 x 4 studs on 18" centers, sheathed on the outside with two layers ⅞" T. and G. boards with one layer of waterproof insulating paper between. Fasten the studs to a 2 x 4 plate at the bottom and to suitable framing at the top of the tank. Erect the first layer of T. and G. boards horizontally and the second layer vertically. Fill the space between the tank and the retaining wall with regranulated cork and pack it tightly in place.

Protect the top of the insulation around the tanks by a curbing consisting of two layers of ⅞" T. and G. boards with one layer of waterproof insulating paper between, laid on properly supported framing so that the top of the curbing is flush with the removable covers. Suitable constructions for the curbing are shown in the drawing.

2. Two Courses of Corkboard on the Bottom and One Course of Corkboard and Granulated Cork on Sides, Portland Cement Plaster or Armstrong's Asphalt Plastic Finish—*Bottom.* Apply insulation as described in Specification 1.

Sides. Erect 2 x 4 studs against the sides of the tank on 18" centers, well secured to the top of the tank and to a 2 x 4 plate at the bottom. Erect corkboard of the proper thickness against the studs, securely fastening the insulation with special galvanized nails of the proper length. Fill the space between the corkboard and the tank with regranulated cork well packed in place. All joints between the corkboards must be tight and the vertical joints staggered. Finish the exposed cork surface with portland cement plaster or asphalt plastic finish mixed and applied as described under "Finishes."

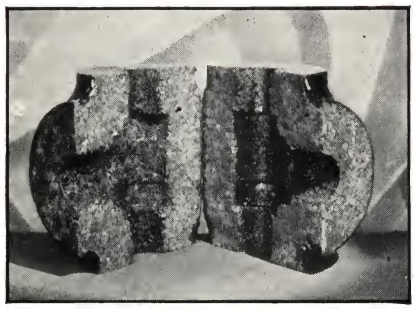
Protect the top of the insulation around the tank with a curbing as described in Specification 1.

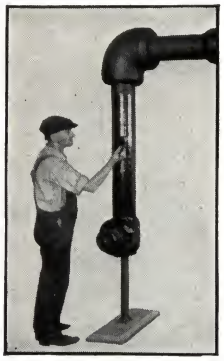
3. Two Courses of Corkboard on the Bottom and Two Courses of Corkboard on Sides, Portland Cement Plaster or Armstrong's Asphalt Plastic Finish—*Bottom.* Apply insulation as described in Specification 1.

Sides. Erect studs (thickness of studs equal to thickness of first layer of insulation) against the tank 24" apart and well secured to the top of the tank and to a wood plate at the bottom. Apply the first layer of Armstrong's Corkboard against the tank sides and between the studs in hot asphalt. Toenail it to the studs with special galvanized nails. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers. Where the second layer crosses the studs, nail it to the studs with special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other. Finish with portland cement plaster or asphalt plastic finish mixed and applied as described under "Finishes."

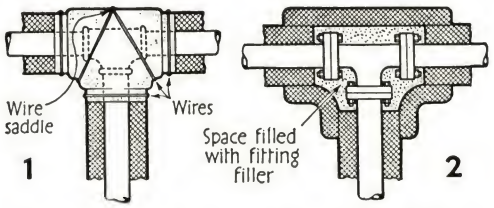
Protect the top of the insulation around the tank with a curbing as described in Specification 1.

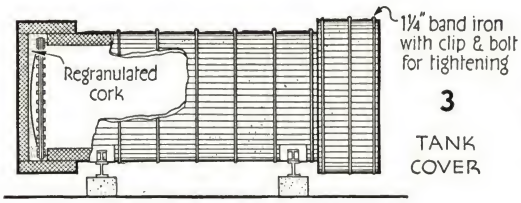
ARMSTRONG'S CORK COVERING for Cold Lines

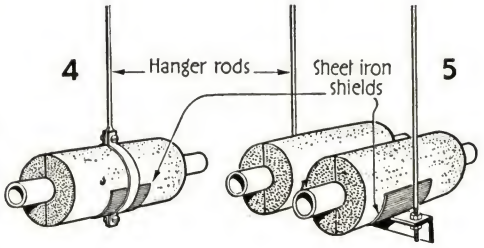




Above, typical molded cover for screwed fitting; center, applying molded pipe covering and flanged fitting covers; right, painting finished job with Armstrong's Cork Covering Paint. Figure 1: Method of installing screwed fitting cover, showing location of wires and straight lengths of covering butted against fitting cover. Figure 2: Molded cover for flanged fitting showing use of Armstrong's Fitting Filler and fitting cover lapped over straight lengths. Figure 3: Method of covering cylindrical tanks. Figures 4 and 5: Pipe hangers must not pierce Armstrong's Cork Covering.







Material and Characteristics

Armstrong's Cork Covering is made in the following thicknesses: "Special Thick Brine," "Brine," and "Ice Water," for standard pipe sizes and fittings of all types; and Lagged Covers in thicknesses up to 6" for any pipe or tank size.

Material is made from clean cork granules compressed in molds and then baked to produce a light, tough, rigid insulating material with a coefficient of heat transmission (*U*) of .28.

Moisture-Resistance. Armstrong's Cork Covering being made of pure cork, has cork's inherent resistance to the effects of water and air-borne vapor that is always present in insulation service.

Fire-Resistance. The material cannot take fire from sparks or embers. Surface charring produced upon exposure to flame checks fire and causes it to cease when flame is removed.

Ease of Installation. Being light in weight, structurally strong, and made in 3′ lengths, Armstrong's Cork Covering is easily handled. No special tools are needed. Sufficient sundries (see "Accessories") are furnished and shipped with the covering. Covering is accurately molded and fits pipe sizes exactly.

Accessories. With cork covering are supplied all sundries necessary for proper application. These include copper clad wire or steel bands and clips for securing the cemented covering in place, Armstrong's Waterproof Cement for lateral and end joints, Armstrong's Fitting Filler for spaces between pipe fittings and Fitting Covers, Armstrong's Seam Filler for surface irregularities and Armstrong's Cork Covering Paint for coating the finished covering surface.

Cost. Due to its reasonable cost, ease of installation, and efficiency, Armstrong's Cork Covering returns a profit on the money invested in it. Annual returns of from 50% to over 300% of the first cost can be expected, depending on the type of installation and the cost of refrigeration.

Selection of Material

Table I lists thicknesses of materials recommended for various conditions and pipe sizes. For unusual installations requiring special consideration consult the nearest Armstrong branch office or distributor (see telephone directory) or Armstrong's Architectural Service Bureau, at the main office, Lancaster, Pa.

Table I - Thicknesses and Uses

Type of Covering	Thickness (inches)	Use (Temp. range in °F.)	
Cork Covering SPECIAL THICK BRINE	2.63 to 4.00 * (depending on pipe size; normally less thickness required for small pipe sizes)	−25 to 0 (for brine, ammonia suction, CO_2, or other refrigerant or refrigerated process lines)	
Cork Covering BRINE THICKNESS	1.70 to 3.00 * as above	0 to +35 (for brine, ammonia suction, CO_2, or other refrigerant or refrigerated process lines)	
Cork Covering ICE WATER THICKNESS	1.20 to 1.93 * as above	+35 and up; (drinking water, beer, etc.)	
CORK LAGGING and DISCS	1.5	+65 and up	Recommendations vary with climatic conditions, cost of refrigeration, etc.
	2	+55 to +65	
	3	+32 to +55	
	4	+20 to +32	
	5	+ 5 to +20	
	6	+ 5 and lower	

Maintenance

Owners should be advised that with regular inspection and care, cork covering which has been properly applied will give efficient service almost indefinitely. Covering should be inspected at least once a year. Loose or broken wires or bands should be tightened or replaced at once. Open joints should be sealed and the cork covering painted annually with one coat of Armstrong's Cork Covering Paint.

ARMSTRONG'S CORK COVERING for Cold Lines (continued)

Specification and Installation

General. *Pipe lines* must be clean of all rust, scale, and dirt; must be absolutely dry and free from frost; all connections must be tight before Armstrong's Cork Covering is applied. *Hangers* must be on outside of covering and may be strap or trapeze type. Protect covering at hangers as shown in Figures 4 and 5, with sheet iron shields of gauge shown in Table II. *Spacing of pipes* must be as shown in Table III, although where cramped conditions are unavoidable, Armstrong's Cork Centers may be used.

Order of installation of the covering and fitting covers varies with the type of fitting (screwed or flanged). When applying molded covering, if fittings are screwed, apply fitting covers first and wedge straight runs between fitting covers; if fittings are flanged, cover straight runs first, wedging covering between flange bolts, and applying fitting covers last. When covering is lagged, apply straight runs first, wedging covering between fittings, and apply fitting covers last. Methods of finishing are similar for all types, see "FINISHING." (Complete instructions for installing and finishing are furnished with each shipment.)

Method of Application. Apply sectional covering with all end joints broken by starting with half section pieces 18″ long and full 36″ lengths. All longitudinal joints shall be on the top and the bottom of the pipe. Use Armstrong's Waterproof Cement on all longitudinal and end joints and secure in place with copper-clad steel wire or steel bands.

Apply molded fitting covers with Armstrong's Waterproof Cement on all joints and secure in place with copper-clad steel wire or steel bands. All spaces between covers and fittings must be carefully filled with Armstrong's Fitting Filler.

For pipes larger than the sizes for which molded covering and fitting covers are made, use Armstrong's Cork Lagging beveled to the proper diameter. When lagging is factory-assembled into half-section form, its application is the same as for sectional covering. When lagging is assembled on the job, all end joints must be broken by starting with alternate 18″ and 36″ length lags. Use Armstrong's Waterproof Cement on all joints and secure lags in place with copper-clad wire or steel bands.

Screwed and flanged fittings larger than sizes for which molded covers are made must be covered with flanged fitting covers made from Armstrong's Cork Lagging. When lagged fitting covers are factory-assembled into half-section form, application is the same as for molded fitting covers. If lagging for fitting covers is assembled on the job, all lagging must be carefully assembled according to instructions included with shipment, using Armstrong's Waterproof Cement on all joints and securing the insulation in place with copper-clad wire or steel bands. All spaces between covers and fittings must be carefully filled with Armstrong's Fitting Filler.

Note 1: In all cases where a pipe passes through an insulated wall into a refrigerated room, the covering shall extend 1″ beyond the wall inside the room. *Note 2:* Wall and floor openings for insulated pipes must be large enough to allow the full thickness of the covering to be used.

Wiring or Banding. Copper-clad steel wire or steel bands are furnished with each shipment and must be used. All wires and bands must be applied straight and tight. With sectional covering, use at least six wires or bands per section. With molded fitting covers, use four wires or bands per cover for screwed fittings, and six for flanged fittings. With lagged covering and fitting covers, use the same as for molded covers.

Finishing. Fill all joints and seams and smooth all chipped and raw edges of covering and fitting covers with Armstrong's Seam Filler. Paint one coat Armstrong's Cork Covering Paint.

Weatherproofing is required for all lines running through refrigerated rooms, shafts, or tunnels, or on lines exposed to weather. Weatherproof jackets on straight runs shall be one layer of 2-ply roofing paper with 2″ sealed laps made to form watersheds and secured with copper-clad wire or steel bands on 9″ centers. Paint weatherproof jacket with one coat of Armstrong's Cork Covering Paint.

Fitting covers shall be weatherproofed with two separate coats of Armstrong's Weatherproofing Plastic applied to approximately ⅛″ total thickness and brought over fitting cover edges to seal with the weatherproof jacket on straight runs.

Membrane Tape Finish. For added protection, cork covered lines exposed to severe conditions in dairy and ice cream plants and industrial plants may be finished with membrane tape. Before painting covering, apply membrane tape 3″ to 6″ wide to covering and fitting covers. Make tape conform to curvature of fitting coverings, using a combination of wrapping and stripping to cover entire surface. Wrap tape spirally on straight runs of covering, lapping edges ½″. Paint with one coat of Armstrong's Cork Covering Paint.

Canvas Finish. Where a decorative finish is desired on exposed lines in such places as hotels, restaurants, and hospitals, cover with 8-oz. canvas painted with several coats of a decorative paint. After covering is completely installed and painted, apply separately one or two layers of 25-lb. resin-sized paper, lapping edges 1″. Stretch 8-oz. canvas tightly over covering and fitting covers and sew all seams neatly, using blind stitches on exposed seams. Size the canvas thoroughly, and when dry, paint with two coats of good quality decorative paint as selected.

Cylindrical Tanks. Insulate all cylindrical surfaces with one layer of Armstrong's Cork Lagging (see Table I for thicknesses), beveled to correct diameter and with mineral rubber finish ironed on both sides at factory. Apply the lags with broken transverse joints using Armstrong's Waterproof Cement on all joints. Secure lagging with galvanized iron bands spaced not over 12″ apart and drawn tight by bolts through clips or with a suitable tightening tool.

Insulate ends of tanks (flanged or welded) with discs of Armstrong's Cork Lagging of same thickness. All spaces between tank and lagging must be filled with Armstrong's Fitting Filler, and spaces between discs and tank heads must be filled with regranulated cork. After all insulation is applied, fill all seams and smooth chipped and raw edges with Armstrong's Seam Filler, and paint entire surface with one coat of Armstrong's Cork Covering Paint.

Table II - Gauges of Hanger Shields

Hanger Type and Pipe Size	Gauge, Galv. Sheet Iron Shield
Strap Hangers	18 ga.
Trapeze Hangers — pipe ¼" to 2½"	16 ga.
Trapeze Hangers — pipe 3" to 6"	14 ga.
Trapeze Hangers — pipe 7" and up	12 ga.

Shields must extend 4" each side of hanger and up to center line of pipe.

TIE WIRES and BANDS

Copper-clad steel wire or steel bands will be supplied by the Armstrong Cork Products Company with each shipment, in proper sizes and with recommended spacings, for each portion of the job.

Table III - Pipe Spacing

Covering, Fitting Types, Pipe Sizes	Between Surfaces of Parallel Bare Pipes (inches)	Between Surface of Bare Pipe and adjacent Surface (inches)
BRINE THICKNESS:		
Screwed Fittings, ¼" to 6" incl.	8	6
Screwed Fittings, over 6"	14	8
Flanged Fittings	14	8
SPECIAL THICK BRINE:		
Screwed Fittings, ¼" to 3" incl.	10	8
Screwed Fittings, over 3"	18	12
Flanged Fittings	18	12
ICE WATER THICKNESS:		
Screwed Fittings, ¼" to 6" incl.	6	4
Screwed Fittings, over 6"	10	5
Flanged Fittings	10	5

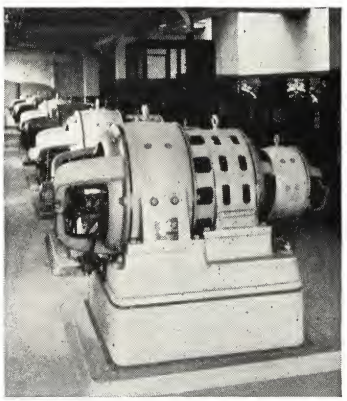
ARMSTRONG'S VIBRACORK for Machinery Isolation

Armstrong's Vibracork provides an economical and thoroughly practical means of guarding against the transmission of vibration. It prevents lowered efficiency, hastened deterioration, irritating noises, and the other natural results of vibration.

What Vibracork Is—Armstrong's Vibracork is a resilient board of pure granules of cork, compressed and baked under pressure. It is supplied in boards, 12 inches by 36 inches, and in thicknesses from 1 to 6 inches. Vibracork is made in two densities, Standard and Heavy.

Properly applied and loaded within its proper limits, Vibracork never loses its life. Unlike other materials, it does not harden or take a "set." It will not disintegrate or change its physical characteristics in any manner.

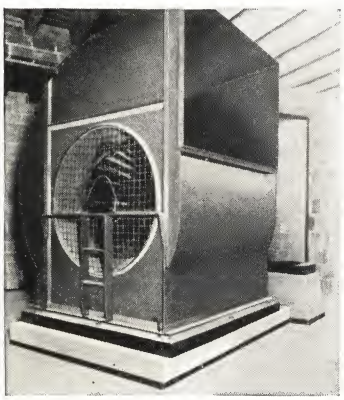
Where Vibracork Is Used—Vibration from motors and engines, fans, blowers, pumps, printing presses, mixers, generators, elevator machinery, and similar equipment can be quieted with a cushion of Vibracork. Even whole floors of buildings can be effectively isolated. Smaller equipment, too, such as oil burners and electric household refrigerators, can be hushed economically with Vibracork.



Elevator motors in this department store are isolated with Armstrong's Vibracork.

Method of Application—There are two general methods of applying Vibracork, both subject to variation. In the first method, the foundation pit is finished with concrete, and then lined on both sides and bottom with Vibracork of the proper thickness and density, and set in hot asphalt. Armstrong's Asphalt Sheeting or a suitable waterproof paper applied in hot asphalt is then put over the cork. Then the concrete for the foundation proper is poured in. This is an excellent construction, especially for heavy machinery.

In the second method, the Vibracork is applied directly between the machine's bedplate and the floor or foundation to which it is fastened. The diagrams at right illustrate four variations of the methods of isolation in common use.



This fan in a large office building, operates without noisy vibration—thanks to isolation by Vibracork

Whatever method is used, the basis of all calculations is the fact that, in order to secure satisfactory results, machinery isolation material must be under a certain amount of compression, yet not so much that resiliency is destroyed. In case of doubt, the engineers of ARMSTRONG CORK PRODUCTS COMPANY will gladly give the benefit of the Company's experience in isolating machines of all kinds.

To secure the desired result, it is essential in installing Vibracork to keep the following points in mind:

1. Avoid through-metal, such as through-foundation bolts, direct contact with metal base and concrete or wood.
2. Through-bolts, if unavoidable, should be properly isolated.
3. The area of Vibracork used should be so designed as to give a deflection in the Vibracork which will enable it to serve best as a spring in the damping of vibration.
4. Where possible, a heavy foundation should be provided, as the foundation aids in the damping by lowering the center of gravity of the installed machine, giving additional mass to the equipment and assuring better compression (spring) conditions in the Vibracork.

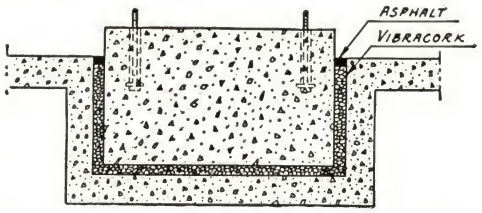


Fig. 1. Isolation of single or multiple machine units may be accomplished most satisfactorily by the pit type foundation.

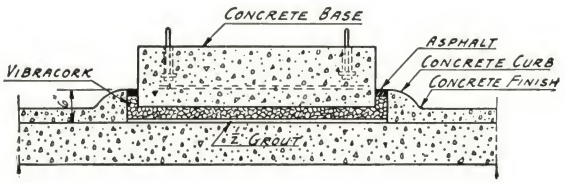


Fig. 2. Floating foundation for existing suspended slab.

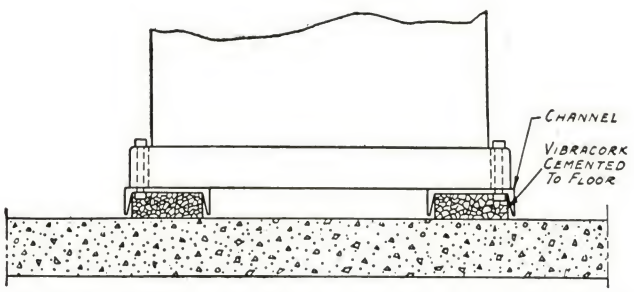


Fig. 3. Method of isolating machines with strips of Armstrong's Vibracork set in channel iron and cemented to the floor.

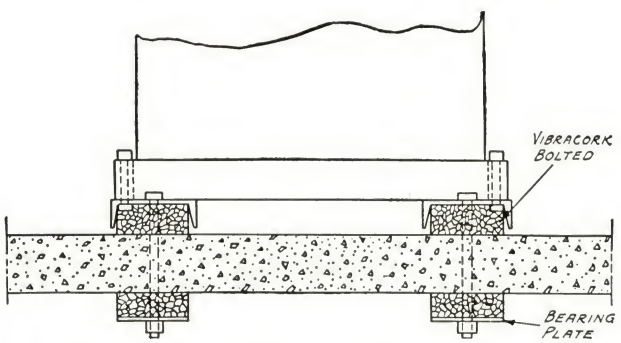


Fig. 4. Another method employing channel irons but with the machine bolted through the floor and an extra pad of cork underneath.

ARMSTRONG'S TEMLOK for Building Insulation

Applying scratch coat of plaster over Armstrong's Insulating Lath.

Application of Armstrong's Building Insulation in the form of sheathing.

Characteristics and Properties

Armstrong's Temlok is a fibreboard insulation made from heartwood fibres of long leaf southern yellow pine under controlled conditions which assure uniformity and adherence to performance standards. It is fabricated in rigid forms and in solid thicknesses from ½" to 1½" without laminations. The material is light in weight (1.2 lbs. per bd. ft.), can be easily handled in large sheets and can be cut, sawed, and worked with ordinary tools.

Temlok's properties make it adaptable to a wide variety of uses in all types of buildings where a combination of high insulating value, low moisture absorption, adequate structural strength, and excellent plaster adhesion is required. For insulation and structural use Temlok is made in board and lath forms in sizes and thicknesses as shown in Table 1.

Thermal conductivity averages .33 B.t.u. per hr. per sq. ft. per degree F. per in. thickness at 75° F. mean temperature.

Insulation value of Temlok depends upon the thickness of the material.

Moisture-Resistance. The resinous character of Temlok fibres makes the material naturally resistant to moisture. Tests show only 2.2% by volume of water absorption. Percentage for this characteristic allowed by U. S. Commercial Standard CS42-35 is 5% for insulating building board and 10% for roof insulating board.

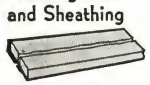
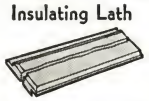
Plaster Bond. The same standard allows 600 lbs. per sq. ft. as the minimum plaster adhesion requirement. The plaster bond for Temlok is 1,024 lbs. per sq. ft.

Strength, both transverse and tensile, and the limits of deflection and linear expansion of Temlok exceed requirements of the U. S. Department of Commerce Commercial Standard CS42-35 for Fibre Insulating Board, dated June 24, 1935, and Federal Specification LLL-F-321-A.

Color and Texture. Natural color of Temlok is golden buff. It has a mat-like texture. The material can be stained, painted, or sanded as desired.

For use as an insulating interior finish, Temlok De Luxe is available factory-finished in six colors. This material has a smooth surface and is made in boards, planks, panels, and tiles.

TABLE I - TEMLOK BUILDING INSULATION PRODUCTS

Product	Lengths	Widths	Thickness	Finish	Color
Insulating Board and Sheathing 	6', 7', 8', 9', 10' and 12'	4'	½", 25/32" and 1" (1½" on order)	Standard	Natural
Insulating Lath 	4'	1'-6"	½", ¾", 1" and 1½"	Standard	Natural

Range of Application

Temlok products in one or more forms are designed for use in three general ways:

1. For Sheathing—As an insulating sheathing as well as an essential part of a frame structure on walls applied under wood siding, stucco, masonry veneer, shingles, slate, and similar types of materials.

2. For a Plaster Base—As an insulating lath on exterior walls, partitions, and ceilings to receive interior plaster, Temlok is applied directly on studs and joists in frame construction and on furring strips over masonry surfaces.

3. For Interior Finish—As an insulating, decorative, and sound absorbing surface finish for walls and ceilings in houses, schools, offices, shops, restaurants, and theatres.

Where to Buy

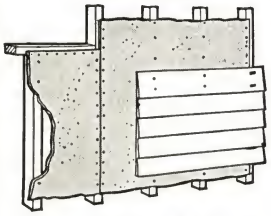
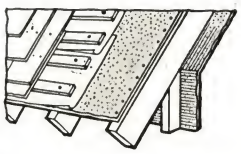
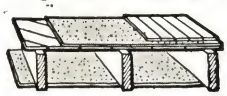
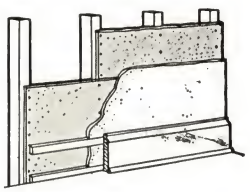
All Temlok Building Insulation products are distributed by the Armstrong Cork Products Company through retail lumber dealers in all sections of the country. If not stocked locally, Temlok products will be supplied through a local lumber dealer by arrangement with offices of the Armstrong Cork Products Company, which are located in principal cities.

Temlok Roof Insulation (22" x 47") is available through recognized roofers and roof applicators.

An Architectural Service Bureau is maintained at the Company's main office at Lancaster, Pa. From this bureau or from field representatives, architects and engineers can freely obtain advice on insulation for all types of buildings and technical information concerning all types of Armstrong's insulating products and uses for each.

ARMSTRONG'S TEMLOK for Building Insulation (continued)

TABLE II - SPECIFICATIONS FOR USING TEMLOK BUILDING INSULATION

Location	Application	Installation	Finishing
Sheathing  Use Insulating Board or Sheathing in widths and lengths suited to job conditions. Thickness as specified.*	Apply Temlok vertically or horizontally on 12" or 16" o.c. framing members. Allow 1/8" between all joints with ample bearing for nailing on all edges. Center end joints on headers between framing members and fit Temlok snugly around all breaks and openings.	Nail (@) Temlok to framing, starting with 6" spacing on intermediate studs and continuing with 4" spacing on all edges.	**Wood Siding.** Nail siding to studs directly over Temlok, butt jointing on stud centers. (#) **Shingles.** Secure according to manufacturer's directions to 1" x 2" furring strips spaced as desired and nailed to studs directly over Temlok. **Stucco.** Cover Temlok with waterproof building paper then nail (#) or staple self-furring stucco bases to framing. Apply non-furring stucco bases over 1" x 2" furring strips, 12" o.c. Install proper metal flashing at all openings. Apply stucco according to manufacturer's directions. (#) **Masonry Veneer.** Cover Temlok with waterproof building paper. Set masonry at least 1/2" from face of Temlok. Secure all shelf angles and masonry ties through Temlok to studs. (#)
Insulation for Attics or Sloping Roofs  Insulating Board on top of or under rafters. Sizes as needed. Thickness as specified.*	For insulating existing buildings or for new roofs requiring a solid wood deck for roofing, use Temlok on under side of rafters. Apply Temlok with long dimensions parallel to 16" o.c. rafters. Provide 2" x 4" headers for all joints and solid nailing bases at rafter ends, at ridges, hips, valleys, etc. Allow 1/8" between all joints with nailing bearing on all edges. Fit Temlok snugly around breaks and openings but do not force boards into place.	Nail (@) Temlok to framing, starting with 6" spacing on intermediate rafters and headers and continuing with 4" spacing on all edges.	**Roof Finish.** Cover Temlok with waterproof building paper. Then nail (#) wood decking or 1" x 2" roof lath to framing members to receive roofing as specified. **Plaster Base.** Use Insulating Lath on under side of rafters according to Specification Instruction below. **Interior Finish.** Apply Temlok De Luxe on under side of rafters according to instructions on T-S.S. No. M3.4.1.
Ceiling and Floor Insulation  Floors over fill, basements, garages, heating equipment etc. Use Insulating Board.*	For floor insulation apply Temlok directly over rough flooring. For ceiling insulation apply directly to ceiling joists allowing 1/8" space around all edges in both cases.	**Floor.** Nail Temlok enough to hold each unit until finish floor is laid. **Ceiling.** Apply Temlok De Luxe Finish as specified on T-S.S.M3.4.1; *or* Temlok Insulating Lath as below.	
Insulating Plaster Base  Temlok Insulating Lath, Thickness as specified.*	In wood construction apply Temlok with long edges at right angles to framing members. Over masonry surfaces apply Temlok to 1" x 2" vertical furring strips 16" o.c. Butt all edges and stagger coursing joints, centering each on framing. Fit Temlok accurately and snugly around piping, electric outlets, etc., but do not wedge into place. Nail (#) full 1/2" grounds for trim securely to framing through Temlok. Reinforce exterior angles with standard corner beads and strip all interior angles with bent metal lath or wire mesh.	Nail Temlok with five nails at each support. For 1/2" Lath, use special plaster board blued nails 1 1/8" long, 5/16" head; for 3/4" and 1" Lath, No. 13 blued nails with 5/16" head; and 8d blued nails for 1 1/2" Lath.	Inspect Temlok installation for proper workmanship. Use gypsum cement or gypsum wood fibre plaster according to manufacturer's directions for both scratch and brown coats. Do not use lime plaster, lime gauged with gypsum or gypsum plasters containing more than 10 per cent lime for either coat. Use any standard plaster finish over brown coat. Temlok Lath need not be wet before applying plaster. Apply all coats according to manufacturer's directions, pressing scratch coats into grooves and joints for maximum reinforcement. Darby with strokes spanning two studs or joists in direction of framing members.

NOTES: (*) At least 1" thickness is recommended for insulating efficiency.
(#) All nails or staples should penetrate framing at least 1"
(@) Drive all nails flush, 3/8" away from edges. For 1/2" thick Temlok use 1 1/2", 3/8" head g.i. roofing nails; for 1" thickness use 8 d common nails.

How to Specify Temlok Products

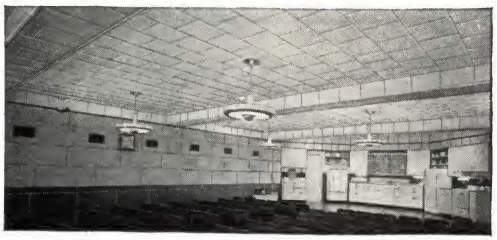
Temlok products can be efficiently and quickly applied by following a few basic instructions. Carpenter specifications should clearly state the following points. When use of Temlok involves work of other trades as masonry, plastering, sheet metal flashing, etc., cross reference should be made in specifications.

1. *Type of Use*—State for what purpose Temlok is to be used, such as sheathing, plaster base, interior finish, etc.
2. *Scope of Work*—List definitely the areas to be covered with Temlok. If more than one thickness is to be used, list separately and clearly define areas where each is to be used.
3. *Classification of Product*—Specify by name, size, and thickness the type of Temlok insulation to be applied.
4. *Method and Means of Application*—State if Temlock is to be laid with open or butt joints, if joints are to be staggered or continuous, if material is to be nailed or cemented in place and if application is to be made over furring strips or directly to studs or joists.
5. *Limiting Structural Conditions*—Specify construction procedure when required to assure satisfactory performance of Temlok, particularly with stucco, brick or stone veneer over frame, and plaster over Temlok.

Recommendations for applying Temlok products are covered fully in Table II, from which specifications for proper type and use of Temlok for all common conditions may be developed.

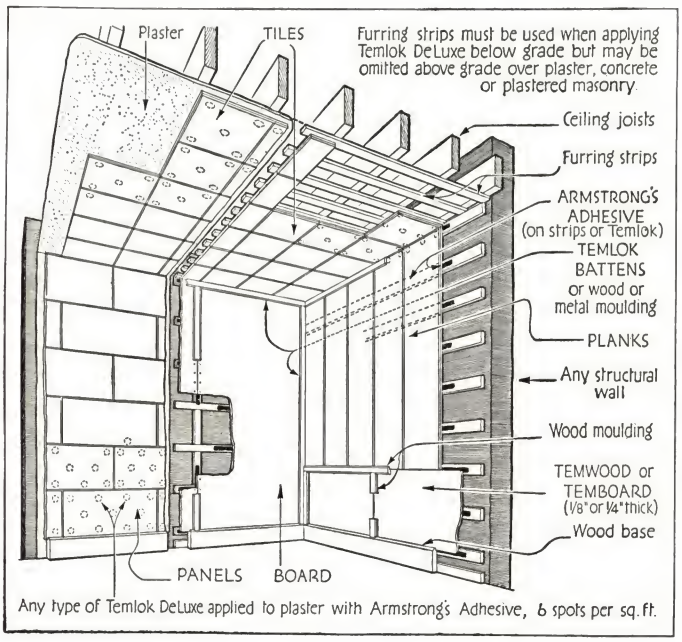
ARMSTRONG'S TEMLOK DE LUXE for Insulating Interior Finishes

Left: Dining room walls and ceiling finished in Temlok De Luxe Tile.



Right: Auditorium and Demonstration Kitchen, Portland, Me. Walls finished with cream Temlok De Luxe Panels; ceiling, white Temlok De Luxe Tile.

Left: Walls of Ivey Department Store, Asheville, N. C., are finished with cream Temlok De Luxe Tiles.



Any type of Temlok DeLuxe applied to plaster with Armstrong's Adhesive, 6 spots per sq. ft.

TABLE I - TEMLOK DE LUXE UNITS

Product	Lengths	Widths	Thickness	Edges
Insulating Board	6', 7', 8', 9', 10' and 12'	4'	▲½", ¾" and 1"	Square finished
Insulating Planks	6', 8', 9', 10' and 12'	6", 8", 10", 1', and 1'-4"	▲½", ¾" and 1"	V bevel on long edges
*Insulating Panels	2'-8" and 4'	1'-4" and 2'	▲½", ¾" and 1"	V bevel on all edges
*Insulating Tiles	1', 1'-4" and 2	1', 1'-4" and 2'	▲½", ¾" and 1"	V bevel on all edges
Border Strips	4' and 8'	1'	▲½", and 1"	V bevel on long edges (4' strips also beveled on short edges)
Batten Strips	6', 7', 8', 9', 10' and 12'	2", 2½" and 3"	½" and 1"	Plain bevel on long edges

(*) Other sizes obtainable ▲1½" Thickness available on order.

COLORS: All forms of Temlok De Luxe are available in the colors: **white, cream, ash, walnut, coral and green.**

Working Characteristics

Temlok De Luxe Finish is a special type of Temlok Building Insulation. Both embody the same qualities of transverse and tensile strength, deflection, linear expansion, moisture absorption, and thermal conductivity, all of which exceed requirements of the U. S. Department of Commerce Commercial Standard CS42-35 for Fibre Insulating Board, dated June 24, 1935, and Federal Specification LLL-F-321A.

Special characteristics of Temlok De Luxe make the material particularly adapted for use as an insulating, sound absorbing interior finish for walls and ceilings of any type of building. It has a smooth-textured surface and is factory-finished with a cold water casein paint in six standard colors. Colors are permanent and the surface of Temlok De Luxe can be cleaned by application of an art gum eraser, wall paper cleaner, or dry rubber sponge. Repainting after installation can be done with either cold-water casein paint or oil paint. Painting requires no surface preparation except cleaning.

Forms, sizes, and thicknesses in which Temlok De Luxe is available are listed in Table I. In all forms and sizes, thicknesses are solid, not laminated.

Where to Buy

Temlok De Luxe Finish is distributed by the ARMSTRONG CORK PRODUCTS COMPANY through retail lumber dealers in all sections of the country. If not stocked locally, Temlok De Luxe Insulating Interior Finishes will be supplied through a local lumber dealer by arrangement with offices of the ARMSTRONG CORK PRODUCTS COMPANY, which are located in principal cities.

An Architectural Service Bureau is maintained at the Company's main office at Lancaster, Pa. From this Bureau or from field representatives, architects can freely obtain advice or further technical information on the use of Temlok De Luxe as well as technical data concerning all types of Armstrong's insulating products.

ARMSTRONG'S TEMLOK DE LUXE for Insulating Interior Finishes (continued)

Range of Application

As an interior finish on walls and ceilings Temlok De Luxe can be used in houses, schools, offices, shops, restaurants, churches, theatres, etc., in either frame or masonry construction. It is particularly adapted for finishing such areas where the insulating characteristics of Temlok De Luxe contribute to its value as a material that is economical to install and attractive.

How to Specify Temlok De Luxe

Temlok De Luxe Tiles, Panels, and Planks can be efficiently and quickly applied on furring strips over plaster, concrete, brick, hollow tile, stone, or solid wood surfaces. Temlok De Luxe Boards can be applied on furring strips or directly on joists or studs in frame construction. Installation should follow the procedure noted in Table II. In addition, carpenter specifications should clearly cover the following points to which cross reference should be made in other specifications when installation of Temlok De Luxe involves work of such other trades as masonry, plastering, electric wiring, and painting.

1. *Scope of Work*—List definitely the areas to be surfaced with Temlok De Luxe. If more than one thickness is to be used, list separately and clearly define areas where each is to be used.

2. *Classification of Product*—Specify by name, size, and thickness the particular units of Temlok De Luxe to be applied.

3. *Limiting Structural Conditions*—Specify construction procedure when required to assure satisfactory performance of Temlok De Luxe after installation. This applies particularly to the preparation of sub-bases such as old and new plaster, concrete, brick, tile, or stone masonry or solid wood.

4. *Care in Handling*—State that the completed installation must be level, all edges and corners true, all units in alignment, and all joints tight. Finish of Temlok De Luxe must be kept clean. Mechanics should work with clean hands. A moist cloth and dry towel are recommended as a part of their equipment.

TABLE II - SPECIFICATION RECOMMENDATIONS FOR USE OF TEMLOK DE LUXE

PREPARATION OF SUB-BASES

PLASTER

New Plaster. Omit white coat. Trowel brown coat to a true, even, reasonably smooth finish and size with Armstrong's Wall Size or wash thoroughly with a 12% solution of zinc sulphate. Plaster must be thoroughly dry before Temlok De Luxe is applied.

Old Plaster. If covered, remove paper or paint, scratch plaster with a wire brush and coat with Armstrong's Wall Size. If uncovered, clean thoroughly. If porous or dusty, coat with Armstrong's Wall Size. Roughen unusually smooth hard surfaces with sandpaper or scratching tool.

CONCRETE

Allow new concrete to dry thoroughly, then coat with Armstrong's Wall Size. Clean and roughen old concrete as for old plaster.

Walls. If surface is not true and level, set 1" x 4" furring strips 6", 8" or 12" o.c. (*) secured to concrete by expansion or anchor bolts and set so that edges of Temlok De Luxe units will be centered on the strips. Shim as necessary to produce level surface.

Ceilings. To support furring strips on rough surfaces, place 2" x 4" joists 16" o. c. and bolt 3' to 4' o. c. For joists on edge bolt up to 6' o. c. nail 1" x 4" furring strips 6", 8" or 12" o. c. at right angles to joists to provide bearing and joint centering for Temlok units.

MASONRY

Above Grade. Walls of brick, hollow tile, stone, etc., should be plastered smooth, plumb and true and prepared for Temlok De Luxe as for new plaster. Preferred construction is 1" x 4" furring strips (*) secured by standard means on 8" to 12" centers for application of Temlok De Luxe on masonry walls above grade.

Below Grade. On all masonry walls below grade furring strips are required. Preferably, such walls should also be plastered and covered with waterproof paper before furring strips for Temlok De Luxe are applied.

WOOD

Framing Members. For application of panels or planks provide 1"x 4" furring strips (*) 6", 8" or 12" o.c. at right angles to studs or joists facenailed at each support with at least two 8d nails. Allow 1/8" space between ends of strips for expansion. Shim strips where necessary to insure level surfaces.

Solid Wood. For satisfactory application of Temlok De Luxe, surfaces must be of smooth finished boards with 4" maximum face. Securely nail existing surfaces to prevent excessive contraction and expansion. Boards of new ceilings should not be driven tightly longitudinally or laterally, but facenailed with at least two nails at each joist. Remove paint or varnish, scrape surface and smooth with No. 3 sandpaper.

Furred Surfaces. Apply Armstrong's Adhesive either on the back of Temlok De Luxe units or, on walls, on face of furring strips. Spots should nearly cover the area of material bearing on the strips. When installing units avoid forcing adhesive through joints

METHODS OF APPLICATION

CEMENTING

It is recommended that all except board units of Temlok De Luxe be installed by cementing to properly prepared bases with waterproof Armstrong's Adhesive. This compound provides a strong, permanent bond between Temlok and wood, plaster or concrete.

Flat Surfaces. Apply Armstrong's Adhesive to back of Temlok De Luxe in uniform spots about 2 1/4" in diameter and 1/4" thick. Keep adhesive about 1" from edge of Temlok units and allow 6 spots per sq. ft. of Temlok material. On units 12" wide or wider daub an additional row of spots near center. Raise spots by daubing adhesive vertically with putty knife. Place Temlok De Luxe units against surface 1" from final position and slide into place under pressure. With large Temlok De Luxe units, plumb every third unit. Units may be toenailed with one or two nails concealed in the bevel to assure proper alignment until adhesive sets.

Furred Surfaces. ▲Apply Armstrong's Adhesive either on the back of Temlok De Luxe Units or, on walls, directly on face of furring strips. After sliding material in place, spots should nearly cover the furring strips. Avoid forcing adhesive through joints between units.

NAILING

Facenailing is ordinarily used only on Temlok De Luxe boards. Nail first to intermediate studs or furring strips with fine finishing nails driven at an angle 6" apart and about 1" longer than thickness of Temlok De Luxe. Nail heads should be countersunk. To avoid nail marks, Temlok De Luxe Boards may be cemented to intermediate studs. Nail around units at least 3/8" away from edges, using 8d common nails on 3/4" and 1" material and 1 1/2" g.i. roofing nails with 3/8" head on 1/2" material spaced 4" apart. Joint battens can be cemented with Armstrong's Adhesive or secured with finishing nails set at an angle and driven through Temlok to penetrate supports about 1". Planks on furred surfaces may be facenailed at top and bottom if moulding or baseboard will conceal nailing.

Toenailing—Used to Supplement Adhesive. If against flat surfaces, planks, tiles or panels may be secured with one nail per foot concealed in beveled joint. On furred surfaces, planks may be toenailed with one nail per furring strip; panels or tiles with one nail at each opposite exposed corner.

(*) Furring strips on both walls and ceilings should be well-seasoned, straight lumber, 1" x 4" for 12" and 16" centering and 1" x 3" for 6" and 8" centering. Centering of 16" is not recommended except for installation of Temlok De Luxe Boards. For large units of Temlok De Luxe for installation with vertical jointing, furring strips should be set horizontally. For horizontal jointing or application of smaller units, set furring strips vertically. For most satisfactory installation of Temlok De Luxe tiles, panels or planks, furring strips should be set 6" or 8" o.c.

▲3/8" Gypsum lath is a satisfactory base for cementing Temlok De Luxe and may be used in place of furring strips.

ARMSTRONG'S TEMLOK for Roof Insulation

The following specifications are intended to include only the labor and material required for insulation and do not include roofing, roof boards, steel decks, or concrete work. The specifications for the work of other trades occurring in conjunction with the insulation should be worded to provide for the following:

1. Roofing—Built-up Roofing—Built-up roofing is applied directly to the surface of insulation and the application of both should go forward at the same time. The first layer of roofing should be cemented to the insulation with asphalt or pitch. No insulated areas should be left exposed overnight. When the insulation cannot be covered by the roofing contractor the same day as laid, the roofing specifications should provide that the roofing contractor shall cover the insulation temporarily to protect it from the elements.

2. Concrete Work—Roof Slabs—Insulation on Top—The roof slabs should be left reasonably smooth and even for proper installation of insulation.

3. Carpenter Work—The specifications should explicitly require the carpenter contractor to make sure that all roof boards are securely nailed in place. The roof deck should be reasonably smooth and even, without high joints between boards.

4. **Steel**—The outside surfaces of the steel roof deck sheets are painted with asphalt paint at the factory. After the sheets are erected, any bare spots should be recoated with asphaltic paint by the erecting contractor.

General

Before the application on the top of roof construction, the roof must be free from all moisture, loose material, and dirt. The contractor who builds the roof deck shall remove all rubbish, etc., from the roof and sweep the surface clean.

Armstrong's Temlok Insulation shall be cut to fit in a workmanlike manner around the penthouse, parapet, fire walls, vent pipes, ventilators, skylights, etc. All outer exposed edges of insulation, as at open eaves or open gable ends or any edge which comes in contact with vertical parapet wall, should be sealed with a strip of felt laid in asphalt or pitch. All cant strips used shall be installed over the insulation.

Insulation should be isolated in areas not greater than thirty feet square in each direction over entire roof at all outside edges, and three feet back from all parapet walls or borders by a seal course of felt bonded to top of insulation and roof deck with asphalt or pitch.

1. Specifications for Armstrong's Temlok on Concrete, Concrete Tile, and Steel Roof Decks—The concrete deck shall first be given a uniform mopping of asphalt or pitch, into which, while hot ( ), thickness of (″) Armstrong's Temlok shall be embedded. If asphalt is used in connection with the installation, an asphalt primer shall be used to insure proper bonding to the roof slab. Not less than thirty-five pounds of asphalt or pitch shall be used per square per mopping. Where the slope of a roof deck is in excess of 3″ to the foot, provision must be made for nailing of insulation by setting wood nailing strips, preferably creosoted, into deck on not over 3′ centers and running parallel to slope. Each board shall be placed close to the adjoining board and the edges of the boards shall be sealed with the asphalt or pitch when set in place. Where the work is stopped at the end of the day, all edges shall be protected and properly sealed off so that no water can get under the seal. This seal shall be drawn down tightly over the edges of the insulation so that it will not be necessary to break it when work is resumed.

On roof decks where condensation is a problem or where insulation is laid over a freshly poured concrete or wet deck, it is essential that a seal be applied consisting of Armstrong's Asphalt Sheeting or not less than 14- or 15-pound saturated felt, lapped 2 inches, and laid between two solid coats of hot asphalt or coal-tar pitch, this seal course to be carried up on all walls, curbs, and other projections 3 inches above the top of the insulation.

2. Specifications for Temlok on Wood Decks—Where there will be danger of the roofing compound's dripping through the deck it shall be covered first with a sheet of rosin-sized paper before installing Armstrong's Temlok.

On the wood deck ( ) thicknesses of (″) Armstrong's Temlok shall be nailed in place. The insulating boards shall be placed close together and secured to flat or sloped roof decks by nailing with (″) galvanized nails with shank ¾″ longer than thickness of board insulation used approximately 12″ on centers both through the center and around the edge of each board.

On roof decks where condensation is a problem, it is essential that a seal be applied consisting of not less than 14- or 15-pound saturated felt, lapped 2 inches, and laid between two solid coats of hot asphalt or coal-tar pitch, this seal course to be carried up on all walls, curbs, and other projections 3 inches above the top of the insulation.

Temlok Roof Insulation is sold through roofing contractors.

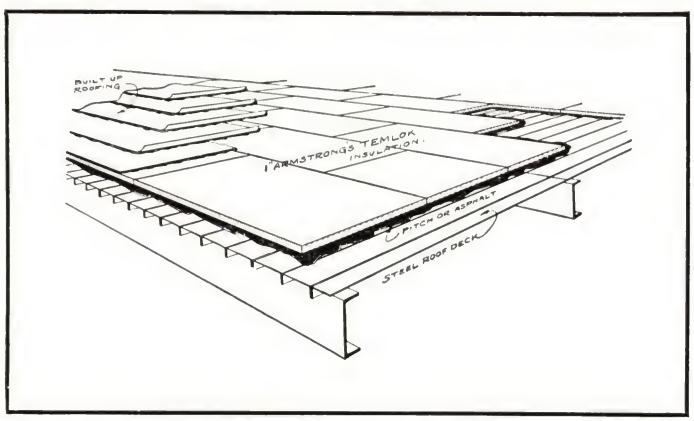


Fig. 1. Method of Installing Temlok on steel or concrete roof deck.

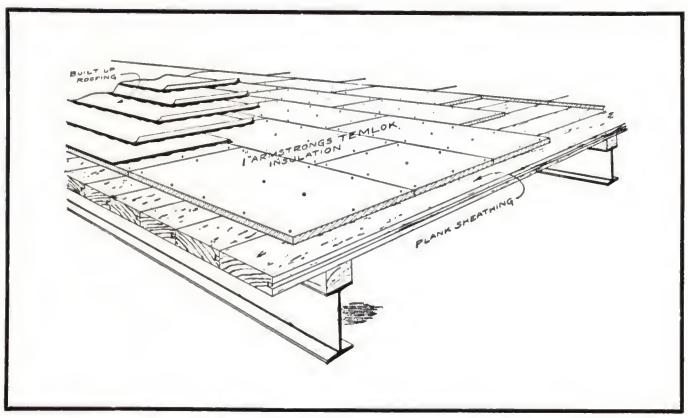


Fig. 2. Method of Installing Temlok on plank sheathing.

ARMSTRONG'S CORK PRODUCTS COMPANY

Building Materials Division

LANCASTER PENNSYLVANIA

Branch Offices

ALBANY
ATLANTA
BOSTON
BUFFALO
CHARLOTTE, N. C.
CHICAGO
CINCINNATI
CLEVELAND
COLUMBUS
DALLAS
DENVER
DES MOINES
DETROIT
HOUSTON
INDIANAPOLIS
JACKSONVILLE, FLA.
KANSAS CITY, MO.
LOS ANGELES
LOUISVILLE, KY.
MILWAUKEE
MINNEAPOLIS
NEW ORLEANS
NEW YORK
OMAHA
PHILADELPHIA
PITTSBURGH
ROCHESTER
ST. LOUIS
SAN FRANCISCO
SEATTLE
WASHINGTON, D. C.

Distributors

Appleton, Wis.....Northwestern Asbestos & Cork Insulation Co.
Baltimore, Md. .....John R. Livezey
Boston, Mass.....T. R. Nunan Co.
Charleston, W. Va.....Capital City Supply Co.
Cleveland, O.....Clark Asbestos Co.
Denver, Colorado.....Stearns-Roger Mfg. Co.
Eau Claire, Wis.....Horel-George Co.
Evansville, Ind.....Tri-State Asbestos & Magnesia Co.
Jamestown, N. Y.....Laco Roofing & Asbestos Co.
Joplin, Mo.....Joplin Cement Co.
Little Rock, Ark.....Fischer Cement & Roofing Co.
Los Angeles, Calif.....Van Fleet-Freear Co.
Manitowoc, Wis.....Northwestern Asbestos & Cork Insulation Co.
Memphis, Tenn. .....Grant Bros., Inc.
New Orleans, La.....H. T. Steffee
Oklahoma City, Okla...Kelley Asbestos Products Co.
Philadelphia, Pa. .....John R. Livezey
Portland, Ore. .....Asbestos Supply Co.
Providence, R. I.....Rhode Island Covering Co.
Richmond, Va.....John R. Livezey
San Angelo, Tex.....San Angelo Building Materials Co.
San Francisco, Calif....Van Fleet-Freear Co.
Seattle, Wash. .....Asbestos Supply Co.
Spokane, Wash.....Asbestos Supply Co.
Springfield, Mass.....Johnson Asbestos Co.
Springfield, Mo. .....Southwestern Insulation Co.
Tacoma, Wash.....Asbestos Supply Co.
Terre Haute, Ind.....The Hartman Co.
Tulsa, Okla.....Kelley Asbestos Products Co.
Washington, D. C.....John R. Livezey
Wichita, Kans.....Ludeman Insulations Co.

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SECTION 10

CONTINUED ⟶

CORK IMPORT CORPORATION

Novoid Cork Insulation

McGraw-Hill Building, 330 West 42nd Street

NEW YORK, N. Y.

BRANCHES

BOSTON, MASS., 248 Boylston Street

CHICAGO, ILL., 400 West Madison Street

PHILADELPHIA, PA., 1524 Chestnut Street

DISTRIBUTORS IN PRINCIPAL CITIES

Products

NOVOID STANDARD CORKBOARD—for all cold storage rooms, and walls and roofs of all kinds of buildings.

NOVOID FEATHERWEIGHT CORKBOARD—This is a special light density corkboard recommended for the insulation of household refrigerators, cold storage store display cabinets, motor truck bodies, refrigerated or air conditioned railroad car bodies, and generally where it will be enclosed in and supported by the construction.

NOVOID SHEET CORKBOARD — In thicknesses ranging from ¼ to ⅞ in. where special requirements need this dimension.

NOVOID AIRTITE CORKBOARD — A light density corkboard with a thin asphalt mastic finish, ironed on both surfaces. Impervious to air in filtration. For *"hard service"* use, in ice storages, dairy rooms, fur storages and sharp freezers of all kinds.

NOVOID MASTIC FINISH CORKBOARD—Coated with two coats, approximately ⅛ in. thickness of hot fluid mastic ironed on under pressure. Has many special uses.

NOVOID CORKDUC INSULATION —Developed to meet the insulation requirements of the small commercial air conditioning installation. ½ in. thickness with ironed-on mastic finish on one side only.

DIMENSIONS AND THICKNESSES—Novoid Standard. Featherweight and Airtite Corkboard are furnished in 12x26, 18x36, 24x36 and 36x36 in. sizes, 1, 1½, 2, 3, 4 and 6 in. thick.

Novoid Sheet Corkboard, Corkduc and ⅛ in. Mastic Finish Corkboard are furnished in 12x36 in. sizes *only*.

The right is reserved to ship not over 10% in lengths shorter than 36 in. on all orders of any type of Novoid Corkboards.

NOVOID CORK MACHINERY ISOLATION—for reducing the noise and vibration of moving machinery.

STONEWALL PLASTIC FINISHES—Airproof and water proof finishing surface for Novoid Corkboard.

NOVOID CORK PIPE COVERING — for all cold lines, tanks, refrigerated drinking water, and air conditioning systems. Also Novoid White Cold Storage Paint and Novoid Aluminum Paint—for interiors of all rooms under refrigeration where Stonewall Plastic finishes are specified for surfacing.

Novoid Corkboard

Installation, Prices and Information

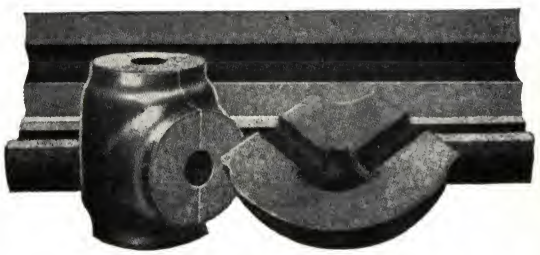
Good cork insulation must be properly installed to give the maximum insulation efficiency. Our distributors in your territory are insulation engineers and contractors, qualified by long experience in the proper methods of erecting Novoid Cork Insulation. Their mechanics in the field are experienced in their trade and their skill means sound, permanent insulation structures.

These distributors will gladly co-operate with you in solving your particular insulation problem, by the application of Novoid Cork Insulation.

Prices, samples and information will be given without obligation.

Novoid Cork Pipe Covering for Air Conditioning

Stonewall Plastic Finishes



Novoid Cork Pipe Covering for Cold Lines

Novoid Corkboard

For the Cold Storage Industry—Novoid Corkboard insulation, manufactured in the United States, is invaluable to the cold storage industry. Rooms, vaults, cabinets, refrigerators and quick freezing rooms must be adequately insulated to keep even temperature for the manufacture of dairy products and other food stuffs and the preservation of these edibles as well as meat, fish, poultry, eggs, vegetables and fruits.

For Air Conditioning Systems—Novoid Corkboard is light in weight yet structurally strong. When you specify this long life insulation for metal ducts carrying cool air, you have a heat resisting insulation on the distributing ducts that keeps heat out and cold in.

Air washing rooms properly insulated with Novoid Corkboard will prevent costly infiltration of warm air that otherwise soon dissipates the correct temperature that should be maintained.

Stonewall Plastic Finish

Stonewall Plastic Finish is a uniform easy working asphaltic plaster, thoroughly machine-mixed at the factory. It is applied cold as received, just like surface cement. It forms a smooth, one-piece, airtight and watertight finish that keeps corkboard dry and sound. It fills every crack and crevice and equalizes any unevenness.

Stonewall Plastic Finish is guaranteed to be waterproof, and not to crack, chip, bulge, run, or become brittle. It is odorless and non-inflammable.

Stonewall Plastic Finish can be washed with hot or cold water, or steam, without injury. It will not absorb odors. Therefore it makes cold storage rooms absolutely sanitary.

If cut or cracked by accident Stonewall Plastic Finish can be skim coated or patched and such injuries completely healed. The new work bonds perfectly with the old.

Stonewall Emulsion

This is the base material of Stonewall Plastic Finish and may be obtained when the factory machine-mixed finish is not desired or when a mineral filler is to be added, in order to give a rough sand appearance to the surface, somewhat similar to stippled walls.

Should a smooth finish be desired, the second coat of Stonewall Emulsion is applied as received. By dipping the trowel in water, the finish may be glazed on the surface. No further troweling is necessary.

Stonewall Plastic Emulsion

Stonewall Plastic Emulsion is a mixture of the proper proportions of Stonewall Emulsion, asbestos floats, and fine screened sand, mixed at the factory and shipped to the job ready for application.

Novoid Cork Pipe Covering

This companion product to Novoid Corkboard is made in three thicknesses: *Heavy Brine,* for temperatures below 0° F.; *Brine,* for temperatures from 0° F. to 25° F.; *Ice Water,* for temperatures above 25° F.

Novoid Cork Pipe Covering is used for covering all brine and ammonia lines, wherever located, and for insulating the ice water lines of refrigerated drinking water systems in hotels, office buildings, and factories. The accurately moulded, asphalt mastic coated sections fit pipes tightly leaving no spaces in which moisture might accumulate, freeze and disrupt the insulation.

Save time and labor with Novoid Cork Pipe Covering when insulating air conditioning pipe lines. Sectional covering for pipe; also covers for welding ells, standard or long radius, 90° or 45° are delivered ready to fit pipe sizes up to 20 ins., inclusive. The illustration, on preceding page, shows 8-in. pipe size cork pipe covering ready to apply.

For covering all fittings Novoid Cork Fitting Jackets are used. These cork jackets are made to fit closely so that no air spaces will exist between the fittings and the insulation.

For covering tanks we recommend the use of Novoid Cork Lagging.

Novoid Cork Machinery Isolation

Novoid Cork Machinery Isolation provides an economical and effective means of reducing the noise and vibration produced by fans, motors, pumps, engines, presses, and practically all other kinds of moving machinery.

Made by baking under pressure a selected grade of granulated cork, its density is controlled. Properly applied, it will not absorb moisture and does not rot. Furthermore it will not harden or take a permanent set, but retains its resiliency indefinitely.

Novoid Cork Machinery Isolation is made in two densities — Standard and Heavy — which provide a proper material for use under practically all conditions of service. 12 ins. wide, 36 ins. long, thickness 1, 1½, 2, 3, 4, 5 and 6 ins.

Literature and Samples

Bulletin 289—Stonewall Plastic Finish.

Bulletin 292—Novoid Cork Covering.

Bulletin 293—Novoid Corkboard Insulation.

Bulletin 294—Novoid Cork Machinery Isolation.

Samples of each product furnished without obligation.

UNITED CORK COMPANIES

Manufacturers, Engineers and Contractors for Refrigeration Insulation, Air Conditioning Insulation, Sound and Vibration Absorption

KEARNY, N. J.

SALES OFFICES AND WAREHOUSES

ALBANY, N. Y.
BALTIMORE, MD.
BOSTON, MASS.
BUFFALO, N. Y.
CHICAGO, ILL.
CINCINNATI, OHIO
CLEVELAND, OHIO
INDIANAPOLIS, IND.
MILWAUKEE, WIS.
NEW ORLEANS, LA.
NEW YORK, N. Y.
PHILADELPHIA, PA.
PITTSBURGH, PA.
ROCK ISLAND, ILL.
ST. LOUIS, MO.
TAUNTON, MASS.

COMPANY

United's Cork products are manufactured in the newest and one of the most modern cork factories in the world. Over 25,000 installations, including cold storage insulation, acoustical correction, cork flooring and other work requiring the use of cork, attest to UNITED'S dependability.

SERVICE ORGANIZATION

Complete branch and warehouse facilities are maintained in leading cities. Experienced engineers, in charge of each branch, are thoroughly qualified to advise on insulation design and erection, acoustical correction and cork tile flooring, etc. Working under each branch manager are field erection workers with long years of practical experience in cork installation work.

UNITED'S Engineering Department will gladly co-operate with architects and engineers in designing, preparing drawings, furnishing specifications, etc., on any job that requires the use of cork.

UNITED'S B. B. BLOCK BAKED CORKBOARD

UNITED'S B. B. Patented Block Baked Corkboard, for low temperature insulation, is 100% pure corkboard, made to U. S. Bureau of Standards specifications. Baked by a new process of combined internal and external heating which uniformly cures throughout the mass. It eliminates charred surfaces preventing breakdown of cork granules, assuring longer life of the corkboard installation. Possesses greater structural strength, flexibility and insulating qualities. The result is less depreciation of refrigeration machinery, better control of temperatures, and lower refrigeration costs.

Adaptable to all kinds of construction. Can be cut, sawed, or nailed like lumber. Sanitary, remains dry; will not rot nor mould. Light in weight, fire-resistant, compact. Takes a minimum of space. Costs no more than ordinary corkboard.

Made in blocks measuring up to 36 in. wide x 36 in. long and from 1 to 16 in. thicknesses.

Write for general catalog and detailed specifications.

NATURAL GRANULATED CORK

Natural Granulated Cork is primarily used in fills requiring the qualities and strength of natural cork.

RE-GRANULATED CORK

This is a by-product obtained in the manufacture of corkboard. It has no capillarity and its insulation value is higher than natural granulated cork.

CORK PIPE COVERING

For brine, ammonia, ice or cold lines. Pipe covering and fitting jackets are moulded to fit absolutely tight so as to eliminate air spaces. Finished with a coating of mineral rubber and applied with waterproof cement which assures imperviousness to moisture.

UNITED'S CORK LAGGING

Beveled to any desired radius without finish, coated one side, or both sides with mineral rubber finish. Furnished for covering cylindrical brine tanks, ammonia accumulators, ice water tanks, filters, etc.

UNITED'S ROOF CORKBOARD INSULATION

Conserves fuel by preventing heat loss; keeps upper floors warmer in winter, cooler in summer; eliminates condensation of moisture on the underside of ceilings.

UNITED'S MACHINERY ISOLATION CORKBOARD

Because of its natural elasticity and vibration absorption qualities, it is a logical material for absorbing vibrations and noise caused by pumps, fans, compressors, generators, motors, steam hammers, pressers, etc.

UNITED'S CORK BRICK

Consists of a mixture of finely ground cork and specially prepared asphalt binder. Makes a flooring which is warm and comfortable. Does not rot, chip, or splinter; will sustain exceptionally heavy loads. Ideal for cow barns and horse stalls. Size 1¾ in. or 2 x 4 x 9 in.

UNITED'S CORK TILE FLOORING

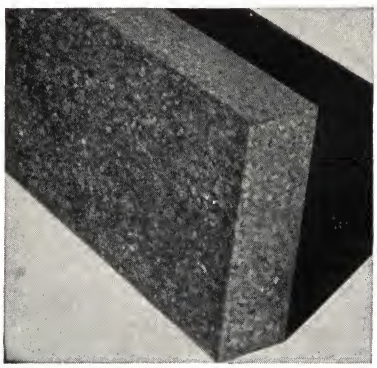
Manufactured in three shades of brown and in many sizes. Either $\frac{5}{16}$ or ½ in. thick, as desired. A quiet, dignified, resilient floor. Ask for "Cork Tile Flooring" Catalog.

UNITED'S CORK BULLETIN BOARDS

¼ in. thick unmounted; ½ in. thick mounted, and in various sizes up to 4 x 6 ft.

UNITED'S ACOUSTICAL CORKBOARD

UNITED'S "Acousticork" is usually applied 1½ in. thick. Has a high sound absorption coefficiency. Combines noise quieting with high insulating value. Easy to install. Structurally strong. Can be painted to harmonize with decorative scheme. High light reflection when painted. Flexible. Write for "Acousticork" Catalog.



United's B.B. Block Baked Corkboard Insulation

Typical "Acousticork" Ceiling Installation

One of Many Designs of United's "Acousticork"

JOINTITE

CORK PRODUCTS

MUNDET CORK CORP.
NEW YORK, N. Y.

INDEX OF PRODUCTS

● **Cork and Its History** — Page 2
Origin, Method of Manufacture, Sizes and Weights of Mundet "Jointite" Corkboard.

● **Facilities of Mundet Cork Corporation** — Page 3
Sales, Service, Contracting and Guarantee.

● **Mundet "Jointite" Corkboard** — Pages 4 to 9
For the Prevention of Heat Transmission in Cold Storage Plants, Rooms, Offices and Miscellaneous Buildings Generally.

● **Mundet "Jointite" Moulded Cork Pipe Covering** — Page 12
For the Insulation of All Cold Lines.

● **Mundet "Jointite" Cork Lagging** — Page 13
For Insulating Cylindrical Tanks and Coolers.

● **Roof Wall and Floor Insulation** — Pages 10 to 17
Prevention of Heat Losses and Condensation on Walls and Ceilings.

● **Mundet Natural Cork Isolation Mats and Machinery Isolation Cork** — Pages 18 and 19

MISCELLANEOUS SPECIALTIES

Mundet "Jointite" Cork Tile Flooring **Mundet "Jointite" Bulletin Board**

Catalogs of these products of Mundet Cork Corporation are filed in other sections of SWEET'S CATALOG FILE (ARCHITECTURAL)

MUNDET CORK CORPORATION

450 Seventh Avenue, New York ● Insulation Factory, Hillside, N. J.

BRANCHES: ALBANY, N. Y.; ATLANTA, GA.; BOSTON, MASS.; CHICAGO, ILL.; CINCINNATI, OHIO; DALLAS, TEX.; DES MOINES, IOWA; DETROIT, MICH.; HOUSTON, TEX.; KANSAS CITY, MO.; LOS ANGELES, CAL.; MEMPHIS, TENN.; NEW ORLEANS, LA.; PHILADELPHIA, PA.; ST. LOUIS, MO.; SAN FRANCISCO, CAL.
CANADA: MUNDET CORK AND INSULATION, LTD., Montreal, Toronto, Winnipeg, Vancouver
GREAT BRITAIN: London, England, MUNDET CORK PRODUCTS, LTD.
PORTUGAL. Seixal, MUNDET ET CIA

DISTRIBUTORS: BALTIMORE, MD., McCormick Asbestos Co.; BUFFALO, N. Y., Claxton Asbestos Co.; CHARLOTTE, N. C., C. R. Howard; CLEVELAND, OHIO, C. S. Ross; FREDERICKSBURG, VA., Fredericksburg Insulation Co.; HARTFORD, CONN., The Hartford Cement Co.; MINNEAPOLIS, MINN., Asbestos Building Materials Co.; NASHVILLE, TENN., John Bouchard & Sons, Co.; NORFOLK, VA., F. H. Gaskins Corp.; OKLAHOMA CITY, OKLA., Standard Roofing & Material Co.; PORTLAND, ORE., Pacific Asbestos & Supply Co.; SALT LAKE CITY, UTAH, Louis A. Roser; SEATTLE, WASH., Pioneer Sand & Gravel Co.; TULSA, OKLA., Standard Roofing & Material Co.; UTICA, N. Y., George Weisenberger.

●

Jointite TRADE MARK

CORK PRODUCTS

A COMPENDIUM OF INFORMATION ON THE USES OF CORK FOR INSULATION PURPOSES

- REFRIGERATION
- SOUNDPROOFING
- HEAT PREVENTION
- HEAT CONSERVATION
- VIBRATION DEADENING
- CONDENSATION PREVENTION

MUNDET CORK CORPORATION

53JT

CORK ... its History

In the land contiguous to the Western Mediterranean and comprising parts of Spain, Portugal and Morocco, grows an evergreen known as the Cork Oak *(Quercus Suber)*. This tree must survive a tremendous amount of heat since it grows in tropical and semi-tropical zones. Nature has provided for this by promoting a growth which covers the trunk and limbs of the tree and effectively insulates it against the intense heat. This growth (or bark) is the cork of commerce. At periodic intervals the trees are stripped of this bark, which is then processed, baled and shipped to manufacturing centers in Europe and the United States. Various manufacturing plants produce a multitudinous variety of cork products including cork insulation.

Cork has been used for many centuries. We find that it was fabricated by the ancients into shoe soles, floats of bottle stoppers. In the past fifty years the uses of cork have multiplied many times. This peculiar and versatile material is now employed in all of the manufacturing and process industries. It has even invaded the field of decorative art, and it may truly be regarded as a necessary concomitant of civilization.

WHY CORK IS AN INSULATOR

As explained above, Nature provided a covering that would protect the Cork Oak from the attack of tropical heat. This is accomplished by shaping a covering of relatively even thickness containing a multitude of minute air particles each hermetically sealed one from the other. Each particle of entrapped air is so small that it will not permit the setting up of air currents and in this way heat penetration is prevented. Furthermore, due to its granular structure, cork has no capillarity, while practically all other insulating materials are of a fibrous nature and have a high degree of capillarity.

Although primarily designed for use in the Refrigeration and Cold Storage Industries, Mundet "Jointite" Cork Insulation has a wide range of applications, as text on the following pages will make clear.

THE MANUFACTURE OF CORKBOARD

The cork bark used for insulation is first ground up into particles or granules of from ⅜ to ⅝ in. in size. These are filled into moulds and hydraulically pressed to the required density. The moulds are then placed in an oven maintained at a relatively high temperature for a period of time dependent upon the thickness of insulation involved. The cork is kept under compression in the moulds throughout the baking process. The heat liquefies the gum or rosin that is peculiar to this type of bark. This gum thoroughly binds the granules together and hermetically seals one from the other, producing a solid slab of cork board (still 100% pure cork). The rough slab is then subjected to a finishing process which cuts it to accurate size and sands its surfaces, completing the manufacture of commercial corkboard insulation.

ESSENTIALS OF GOOD INSULATION

The essentials of good insulation are low thermal conductivity; fire retardance; permanence; non-absorbence; sanitation; economy. Mundet "Jointite" Corkboard incorporates all these qualities.

Mundet Corkboard meets the U. S. Government Master Specification requirements in every respect. Its heat transmission is guaranteed not to exceed .30 B.t.u. per square foot per inch thickness per degree difference in temperature per hour when tested under Bureau of Standards conditions and methods. In actual cold storage practice the insulation value may be taken as about ten per cent better than the guaranteed figure.

CONDUCTIVITY CHART FOR CORKBOARD INSULATION

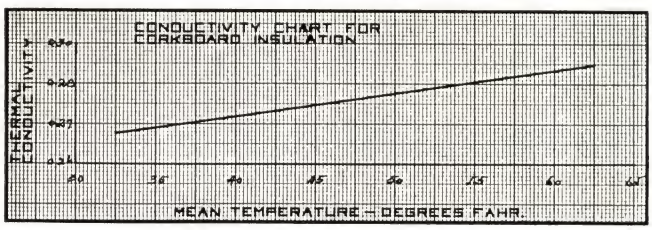


TABLE OF THICKNESSES RECOMMENDED TO BE USED FOR COLD STORAGE WORK AS INSULATION FOR VARIOUS TEMPERATURES

Range of temperature	Walls, in.	Ceilings, in.	Floor on ground, in.	Floor above ground, in.	Roofs, in.
Below 0° F.	8	8	7	8	9
0° to 10° F.	7	7	6	7	8
10° to 20° F.	6	6	5	6	7
20° to 35° F.	5	5	4	5	6
35° to 50° F.	4	4	3	4	5
50° to 60° F.	3	3	2	3	4
Above 60° F.	2	2	0	2	2

BAKERIES

Gordon Baking Co.
Ward Baking Co.
Kroger Grocery & Baking Co.

CANDY FACTORIES

F. G. Shattuck Co. (Schrafft's), New York, N. Y.
Park & Tilford, New York, N. Y.
Planters Nut & Chocolate Co., Suffolk, Va.

OUR FACILITIES

The name of Mundet was first identified with cork products in the year 1865. Today the Company ranks among the leaders of the industry.

The Company maintains two plants for the exclusive manufacture of insulation products. One is located in Portugal and the other in New Jersey (about ten miles from New York City). These plants are of about the same capacity and can produce a total of 60,000,000 to 70,000,000 ft. board measure of insulation a year. "Jointite" products are stocked in many of the large centers of the world. The Portuguese plant is adjacent to the Port of Lisbon from which regular sailings are to be had to any part of the world. The New Jersey plant at all times carries large stocks of finished products, as do all of the Branch Offices located in the principal cities of the United States and Canada. The Company's shipping facilities are unsurpassed, either by rail or water.

SALES AND SERVICE

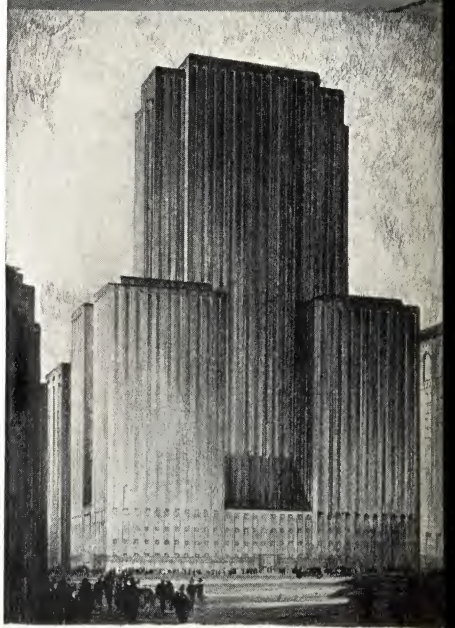
The Company maintains branches in the principal cities of the United States and Canada for the convenience of its clients. Our branch offices are in charge of competent engineers who will gladly co-operate and furnish information pertinent to insulation work.

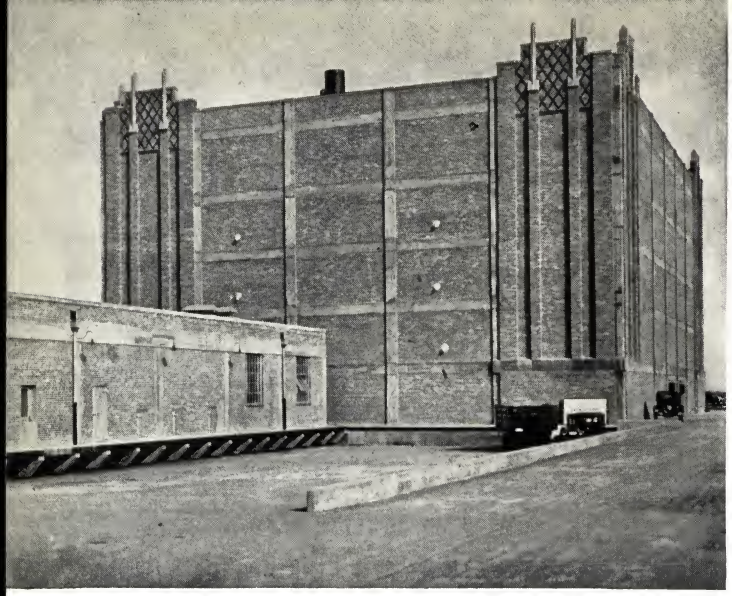
CONTRACTING

The Company maintains a well organized erecting force at each branch office fully capable of handling any erection contract involving its products. No contract is too small or too large.

GUARANTEE

The Company unqualifiedly guarantees that its material and workmanship are of the best and agrees to make good, without cost to the client, any defect that may be chargeable to inferior material or workmanship.





General *for* Cold Storage *Walls* . . .

Brick, Concrete, Hollow Tile,

Where First Course Is Erected in Cement Mortar

SPECIFICATION NO. 1 • • • The walls shall be insulated with .... in. of "Jointite" Corkboard, applied in two courses of .... in. each. The first course of corkboard shall be erected against the walls in a ½-in. bed of portland cement mortar.

Note (1): If walls are of concrete, specify that they shall be thoroughly hacked in order to provide a good bond.

The second course of corkboard shall then be applied against the first course in a heavy dip coat of hot asphalt and additionally secured to the first course with hard wood skewers of suitable length. All joints shall be broken relative to adjacent layers and to the preceding course. The exposed cork surfaces shall be finished with a ½-in. plaster finish applied in two coats; the first coat to be a rough or scratch coat and the second coat to be brought to a float (or trowel) finish and marked off in squares of approximately 4 ft. in order to minimize and direct shrinkage cracks.

Note (2): If mastic finish is desired in place of plaster finish, omit the last paragraph above and substitute as follows:

The exposed cork surface shall be finished with a ⅛-in. cold mastic finish consisting of a brush or spray application of Mundet Asphalt Emulsion, followed by a trowel application of Mundet Asphalt Emulsion mixed with asbestos and clean screened sand in the following proportions, viz., 50 gal. emulsion to 100 lb. of asbestos floats to 4 cu. ft. of sand. (This finish is black in color and may be painted if desired.)

Where First Course Is Erected in Hot Asphalt

SPECIFICATION NO. 2 • • • The walls shall first be given a single coat of portland cement plaster left under the float.

Note (1): If walls are of concrete, specify that they shall be thoroughly hacked in order to provide a good bond.

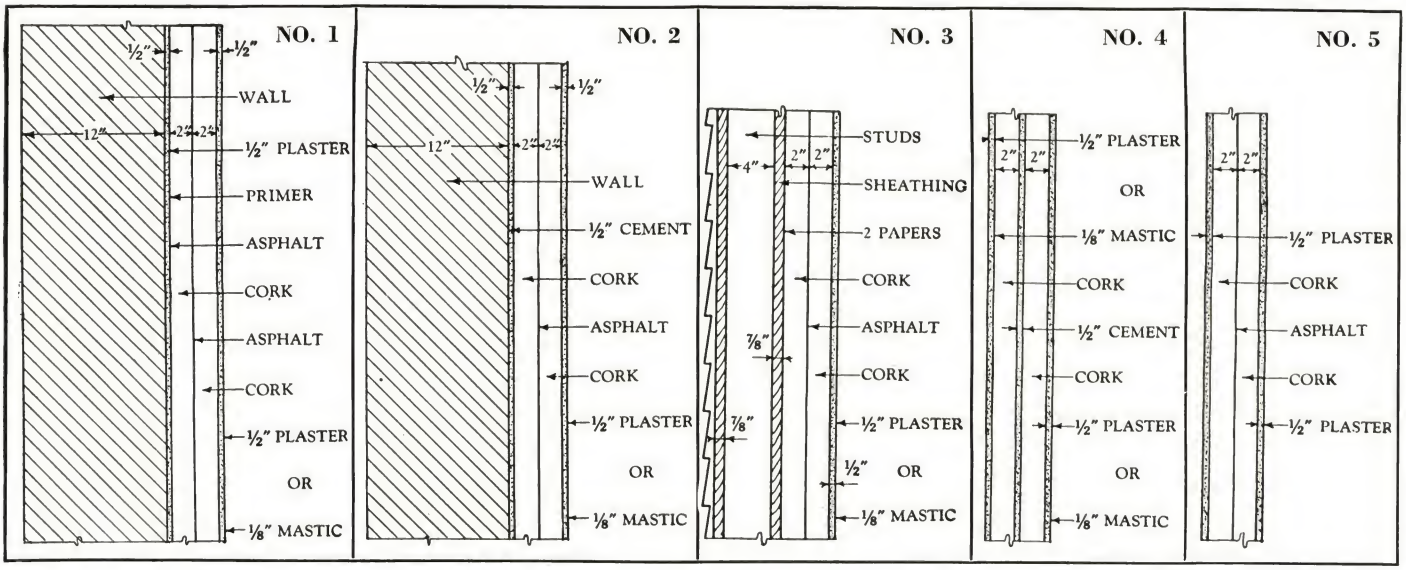
After the plaster coat has set, the walls shall be given two spray, or brush, coats of Mundet Asphalt Primer, following which the walls shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The first course of corkboard shall be applied against the walls in a dip coat of hot asphalt. The second course and the finish shall be as stipulated in Specification No. 1.

Wood Frame Walls

SPECIFICATION NO. 3 • • • Two courses of waterproof insulation paper shall be securely tacked against the sheathed surfaces, after which the walls shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The first course of corkboard shall be nailed dry to the wall with the galvanized wire nails made especially for this type of work. The second course of corkboard shall be applied against the first course in a heavy dip coat of hot asphalt, and additionally secured with hard wood skewers of suitable length. All joints shall be broken with respect to adjacent layers and to the preceding course. The finish shall be as provided in Specification No. 1.

Cork Partitions—Cement Mortar

SPECIFICATION NO. 4 • • • The partitions shall be of the solid cork and cement self-sustaining type, and shall be fabricated of two courses of .... in. "Jointite" Corkboard. The first course of corkboard shall be erected against temporary studding and the second course shall be erected against the first in a ½-in. bed of portland cement mortar, and



CLUBS

Chicago Womans Club, Chicago, Ill.
Engineers Club, Boston, Mass.
Union League Club, New York, N. Y.

COLD STORAGE WAREHOUSES

Merchants Refrigerating Co., Jersey City, N. J.
Great Atlantic & Pacific Tea Co., Various Locations
Manhattan Refrigerating Co., New York, N. Y.

Specifications Insulation . . . . . Floors

Wood Frame • Cork Partitions

additionally secured with hardwood skewers of suitable length. All joints shall be broken relative to adjacent layers and to the preceding course. The exposed surfaces shall be finished as provided in Specification No. 1.

Cork Partitions—Hot Asphalt

SPECIFICATION NO. 5 • • • The partitions shall be of the solid cork and cement self-sustaining type, and shall be fabricated of two courses of .... in. "Jointite" Corkboard. The first course of corkboard shall be erected against temporary studding and the second course shall be erected against the first in a dip coat of hot asphalt, and additionally secured with hard wood skewers of suitable length.

All joints shall be broken relative to adjacent layers and to the preceding course. The exposed cork surfaces shall be finished with ½ in. of portland cement plaster mixed 1:2, applied in two coats; the first coat to be a rough or scratch coat and the second coat to be brought to a float (or trowel) finish and marked off in squares of approximately 4 ft. in order to minimize and direct shrinkage cracks.

Concrete Floors, Concrete Base

SPECIFICATION NO. 6 • • • The floor shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The first course shall be laid down in a heavy mop coat of hot asphalt and the second course shall be laid upon the first in like manner, with all joints broken relative to the first course. The exposed top of the corkboard shall then receive a heavy mop coat of hot asphalt which shall thoroughly seal all joints.

A concrete wearing floor .... in. thick shall be laid upon the corkboard. The first .... in. shall be gravel or rock concrete mixed . . : . . : . . followed by a 1-in. cement top mixed 1:2 and floated and troweled to a smooth and even finish. The floor shall be pitched to floor drains.

Wood Floors, Concrete Base

SPECIFICATION NO. 7 • • • The floors shall be insulated with .... in. of "Jointite" Corkboard in two layers as provided in Specification No. 6.

Over the first course of corkboard there shall be laid ....x4-in. wood sleepers on 28-in. centers, all securely mopped in.

The exposed cork surface shall then receive a heavy mop coat of hot asphalt which shall thoroughly seal all joints.

A wearing floor of 2x.... in. long leaf yellow pine shall then be applied, securely nailed to the sleepers provided in the top layer of corkboard.

Mastic Floors, Concrete Base

SPECIFICATION NO. 8 • • • The floor insulation shall be laid as in Specification No. 6.

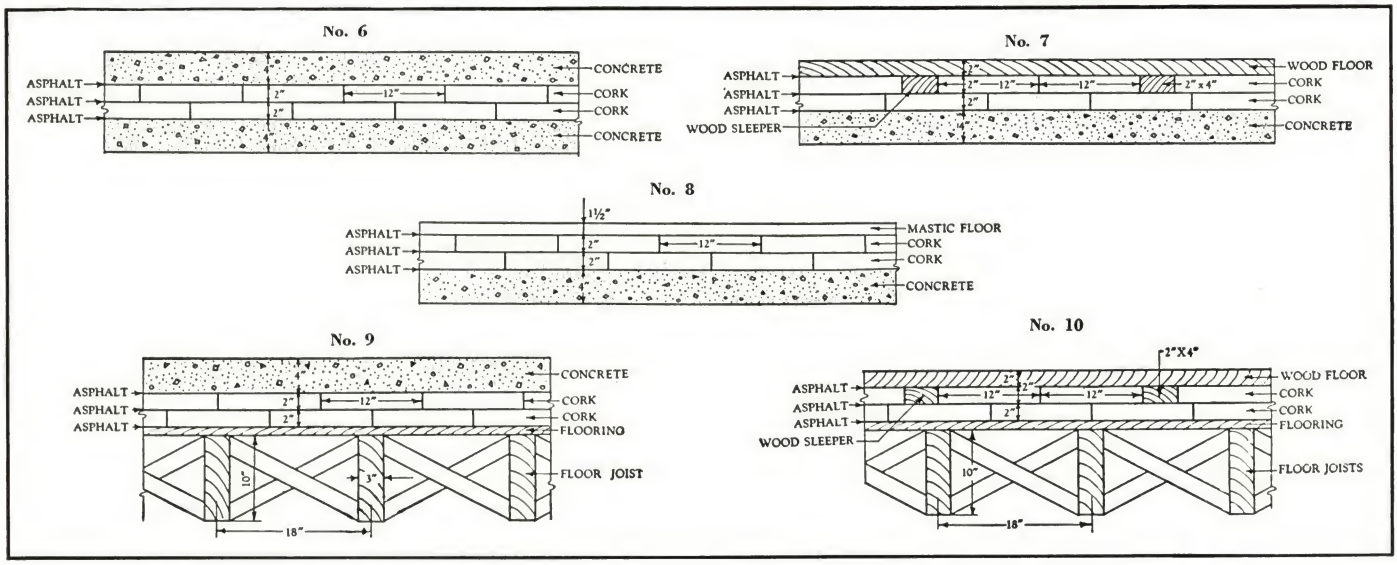
The finish floor shall consist of a 2-in. mastic wearing surface applied in two courses.

Concrete Floors, Wood Base

SPECIFICATION NO. 9 • • • The floor shall be insulated as in Specification No. 6.

Wood Floors, Wood Base

SPECIFICATION NO. 10 • • • The floors shall be insulated as in Specification No. 7.



COLLEGES

Yale University, New Haven, Conn.
Harvard University, Boston, Mass.
University of Pennsylvania, Philadelphia, Pa.

DAIRIES

Borden Farms Products Co., Various Locations
Sheffield Farms Co., Various Locations
Beatrice Creameries, Detroit, Mich.

Users of Mundet

General Insulation

Ceilings • •

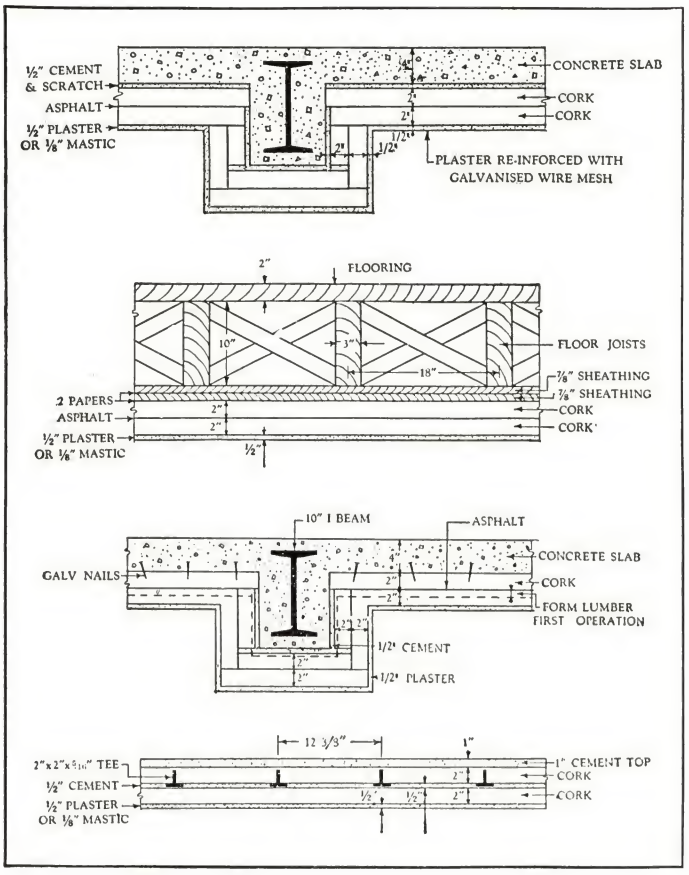
Concrete

SPECIFICATION NO. 11 • • • The ceiling shall be insulated with ... in. of "Jointite" Corkboard applied in two courses. The ceiling areas shall first be thoroughly hacked and pitted and shall then receive a tight scratch coat of portland cement mortar.

The first course of corkboard shall then be applied in a ½-in. bed of portland cement mortar and securely propped in place until the cement has set. The second course of corkboard shall then be applied against the first course in a heavy dip coat of hot asphalt, and additionally secured with hardwood skewers of suitable length. All joints shall be broken relative to adjacent layers and to the preceding course.

The exposed cork surfaces shall be finished as provided in Specification No. 1.

Note: If plaster finish is desired it is recommended that No. 19-gauge galvanized wire mesh having two meshes to the inch be securely stapled to the cork surfaces before plaster finish is applied.



Alternate

The ceiling shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The ceiling areas shall be stripped with 2x4-in. treated lumber spaced 12 in. or 18 in. or 24 in. apart and fastened to ceiling with galvanized expansion bolts not more than 5 ft. 0 in. on centers. The entire ceiling area shall then be given a spray coat of Mundet Asphalt Primer, following which the first course of corkboard shall be applied in a heavy dip coat of hot asphalt and securely toe nailed to 2 in. 4 in. strips. Second course application same as specified in base specifications.

Ceilings, Wood

SPECIFICATION NO. 12 • • • The ceiling shall be insulated with .... in. of "Jointite" Corkboard in two courses over wood sheathing.

Two layers of ⅞-in. tongued and grooved sheathing shall be installed on the underside of ceiling joists with two layers of waterproof insulation paper between the sheathing courses, and two layers of waterproof insulation paper securely tacked to the underside of the sheathing. On the ceiling surface thus prepared shall be erected the first layer of corkboard, nailing each piece securely in place. The second course of corkboard shall then be applied against first course in a dip coat of hot asphalt and finished as provided in Specification No. 1.

Ceilings (New Buildings) Concrete

SPECIFICATION NO. 13 • • • The ceilings shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The general contractor will lower the forms

FISH STORAGE WAREHOUSES

N. J. Ice & Cold Storage Co., Beach Haven Crest, N. J.
Bay State Fishing Co., Boston, Mass.
General Seafoods Co., Various Locations

FUR STORAGES

Revillon Freres, New York, N. Y.
L. Bamberger & Co., Newark, N. J.

SPECIFICATIONS (Cont'd)

• • Roofs

of the slab construction a distance sufficient to allow the first course of corkboard to be laid dry in the forms. There shall be at least six special galvanized nails placed in each sheet of corkboard laid in forms with the heads protruding not less than 1½ in., to act as a key in the concrete. After the forms are stripped the second course of corkboard and both courses of corkboard on the beams and girders shall be applied and finished as in Specification No. 11.

Ceilings, False T Iron

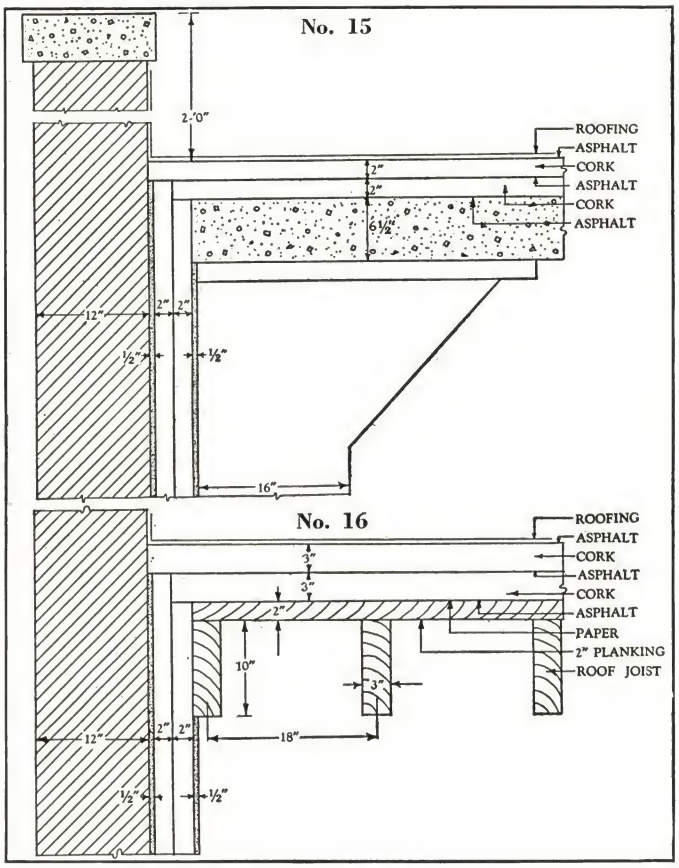
SPECIFICATION NO. 14 • • • The ceilings shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. A framework consisting of 2x2x.. in. tee irons spaced on 12½-in. centers, shall be erected upon 2x2-in. wood framing concealed in the cork wall insulation. The first course of corkboard shall be placed between the tee irons after all edges have been dipped in hot asphalt. The second course of corkboard shall be applied against the underside of the first course in a ½-in. bed of portland cement mortar, and additionally secured with hardwood skewers of suitable length. All joints in the second course shall be broken relative to adjacent layers and to the first course. The top exposed surface of the corkboard shall be finished with 1 in. of portland cement plaster left under the float. The underside of the insulation shall be finished as provided in Specification No. 1.

Concrete

SPECIFICATION NO. 15 • • • The roof slab shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The first course of corkboard shall be laid down on the concrete slab in a heavy mop coat of hot asphalt, and against it a second course of corkboard shall be applied in like manner. All joints shall be broken relative to adjacent layers and to the preceding course. The exposed cork surfaces are to remain uncoated and left ready for the roofing contractor to lay his roofing. The cork contractor and the roofing contractor shall co-operate with each other in order that all insulation laid in any one day will be protected with at least two-ply roofing.

Wood

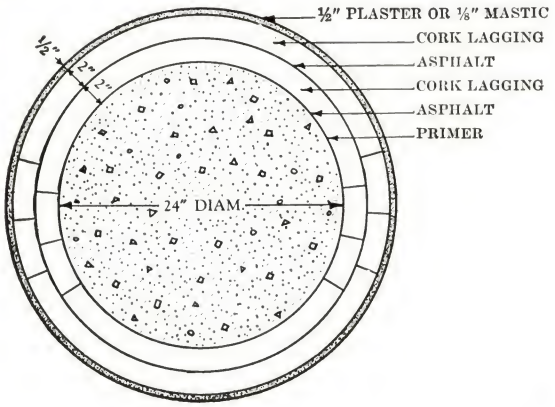
SPECIFICATION NO. 16 • • • The roof shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. Over the roof planking shall be laid one course of waterproof insulation paper with the seams lapped at least 3 in. and mopped in with hot asphalt. The cork insulation shall then be applied as in Specification No. 15.



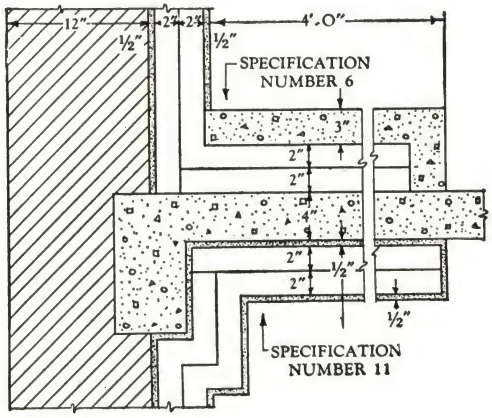
Column Insulation

SPECIFICATION NO. 17 • • •

The circular columns shall be insulated with ..... in. of "Jointite" Corkboard bevelled lagging, applied in two courses. The column surfaces shall receive a single coat of Mundet Primer, after which the first course of lagging shall be applied in a dip coat of hot asphalt. Each lag shall be securely locked to the adjacent lags with hard wood skewers of suitable length. The second course of lagging shall then be applied against the first course in a heavy dip coat of hot asphalt, and additionally secured to the first course with hard wood skewers of suitable length. The exposed cork surfaces shall be finished as in Specification No. 1.

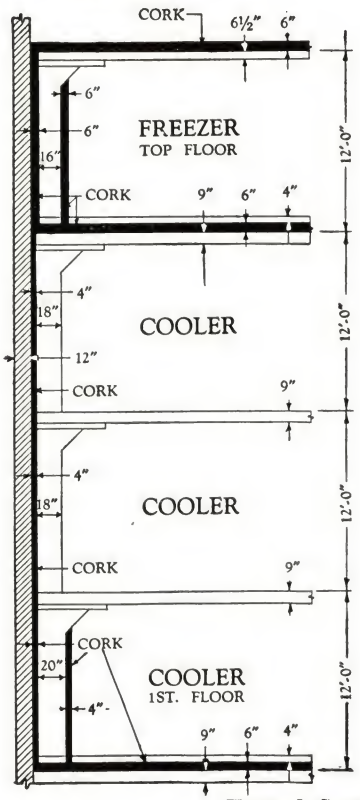


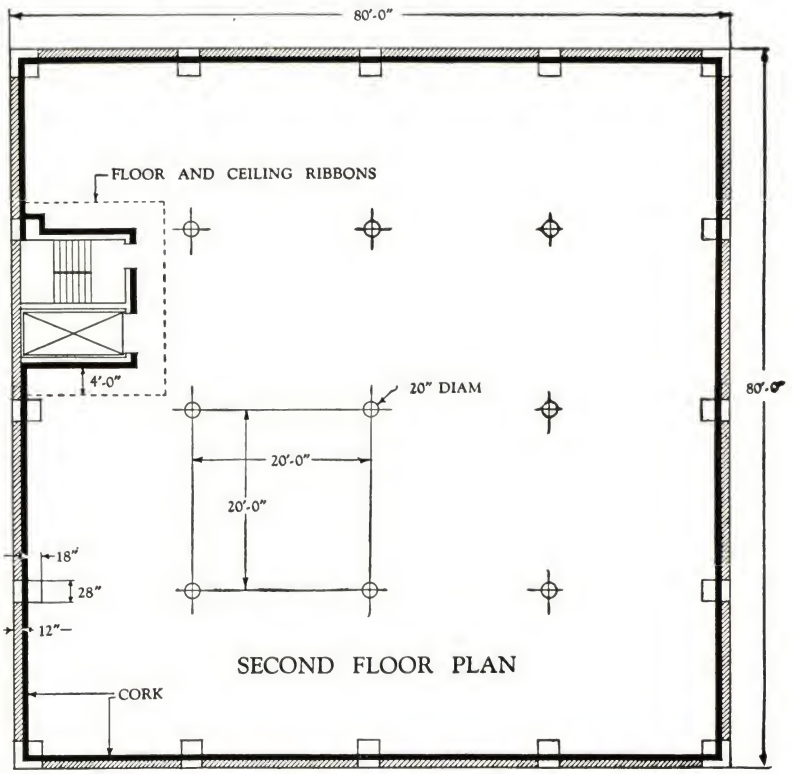
LAP OR RIBBON INSULATION



Used where continuous insulation is not obtainable.

Ribbon insulation is the form shown on the accompanying sketch. It consists of insulation either on floor or ceiling which extends out to a limited distance only from the wall line. It is used where conditions make it impossible to provide continuous insulation. The ribbon insulation must be carried around beams and girders. For specifications, see notes on cut.





Typical Section and Plan of Building Showing Continuous Installation

Users of Mundet

[8]

HOTELS

Hotel Park Central, New York, N. Y.
Hotel St. George, Brooklyn, N. Y.
Hotel Majestic, Philadelphia, Pa.
Bryn Mawr Beach Hotel, Chicago, Ill.
Kenmore Hotel, Boston, Mass.
Jung Hotel, New Orleans, La.

Coil Bunker Construction

SPECIFICATION NO. 18 • • •

A coil loft or bunker shall be constructed, supported on ...x... in. timbers spaced 20 in. apart (Item 1), which shall be suitably supported in walls.

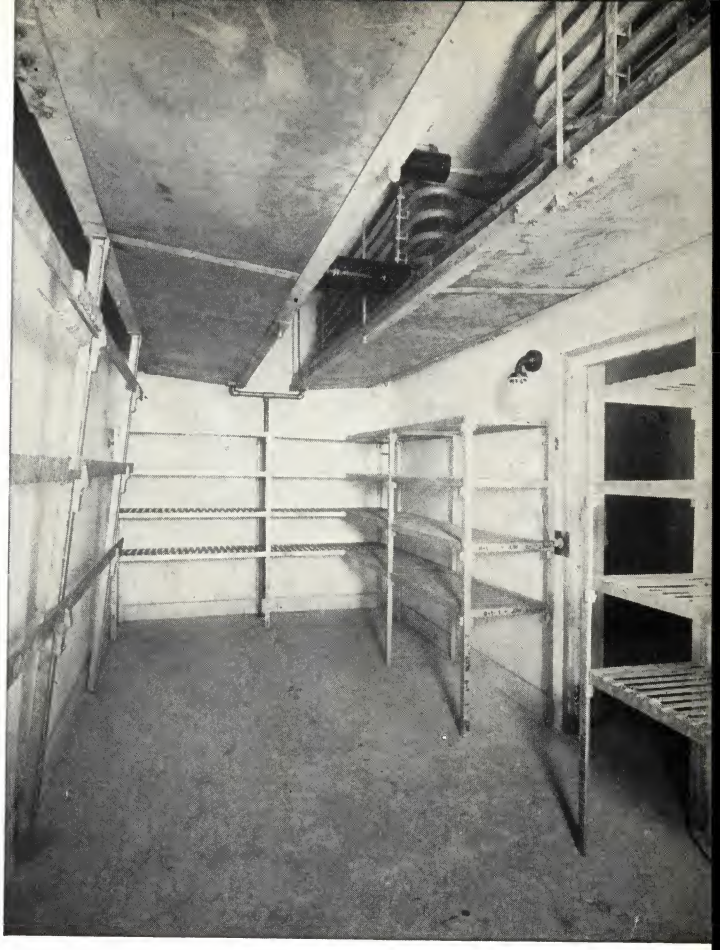
Wood cleats 2x4 in. (Item 2), shall then be securely bolted to the sides of the timbers and will act as supports for the warm air baffles (Item 4).

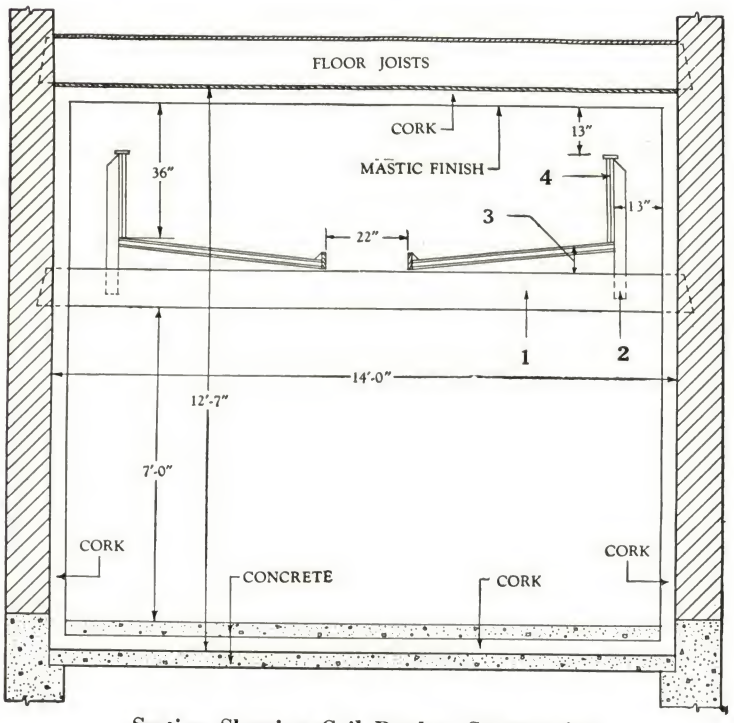
The top of the timbers shall then be given the correct slope by nailing tapered strips, which shall be the width of the timber and shall vary from 3 in. high at the outside end to 1 in. at the inside. These tapered strips shall then be sheathed with 7/8-in. tongued and grooved sheathing of spruce or cypress, over which shall be laid two courses of waterproof insulation paper, followed by a single course of 2-in. corkboard, laid down in and coated with hot asphalt.

In the corkboard shall be buried 2x2-in. wood sleepers on 26-in. centers, which will act as nailing strips for the 7/8-in. tongued and grooved sheathing which shall be placed over the corkboard together with two layers of waterproof insulation paper, all securely nailed to the sleepers (Item 3). The top surface of bunker floor shall then be covered with No. 24-gauge galvanized iron (or copper) lining flashed up on the warm air baffles a distance of 12 in., and provided at the low point with a scupper for drainage connection. The baffles shall be constructed of two courses of 7/8-in. tongued and grooved sheathing with two layers of waterproof insulation paper between them, all securely nailed to the wooden cleats mentioned above (Item 4).

The edges of the cold air duct shall be formed with 2x8-in. timbers securely fastened to the bunker timbers. The metal lining of the bunker shall extend over these timbers and shall be lapped vertically downward at least 2 in.

Note: For rooms having less than 8 ft. inside clear width, it is customary to use a single bunker pan. In rooms of greater than 8-ft. width the double bunker pan illustrated should be used. It is customary to make the total duct widths equal to about 30% of total width of room.





Section Showing Coil Bunker Construction

ICE CREAM PLANTS

Breyers Ice Cream Co., Various Locations
F. G. Shattuck Co. (Schrafft's), New York, N. Y.
Eskimo Pie Corp., Brooklyn, N. Y.
Anheuser-Busch Co., Various Locations
Wieland Ice Cream Co., Chicago, Ill.
Good Humor Ice Cream Co., Detroit, Mich.

Users of Mundet

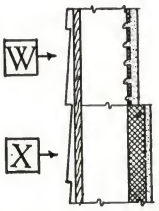
Typical Construction Details

Below are illustrated certain commonly used building sections, with and without insulation, together with tables showing the heat transmission through them expressed in B.t.u. per hour, per square foot, per degree difference in temperature. The figures given for uninsulated construction have been taken from information contained in the 1930 Guide of the American Society of Heating and Ventilating Engineers. Savings in heat loss by the use of Mundet "Jointite" Corkboard are apparent.

The cuts are representative of methods of construction in common use and the data given will apply regardless of size or class of work. Should there be a type not illustrated upon which information is desired, a communication addressed to any of our offices will receive immediate attention and the specific information will be furnished.

On thickness of cork insulation greater than 3 in., figures are based on two-layer construction, using hot asphalt between the layers of cork.

SPECIFICATIONS



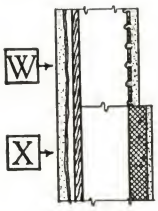
"W" beveled siding, waterproof paper, sheathing, studding, lath and plaster.

"X" beveled siding, waterproof paper, sheathing, studding, corkboard, plaster.

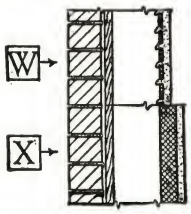
Not insulated, W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.275	.117	.098	.073	.058	.040

"W" stucco on metal lath, furring, waterproof paper, sheathing, studding, lath and plaster.

"X" stucco on metal lath, furring, waterproof paper, sheathing, studding, corkboard, plaster.



Not insulated, W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.319	.125	.102	.076	.059	.041



"W" brick veneer, waterproof paper, sheathing, studding, lath and plaster.

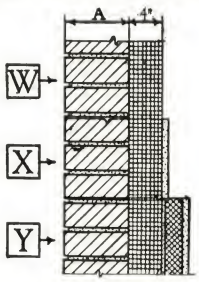
"X" brick veneer, waterproof insulation paper, sheathing, studding, corkboard, plaster.

Not insulated, W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.258	.114	.095	.072	.057	.040

"W" brick, tile.

"X" brick, tile, plaster.

"Y" brick, tile, portland cement backing, corkboard, plaster.



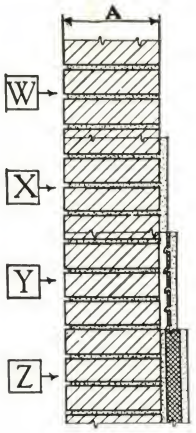
Thickness, A, in.	Not insulated		Y, insulated with corkboard, in.				
	W	X	1½	2	3	4	6
8	.257	.243	.110	.093	.071	.054	.039
12	.205	.197	.101	.086	.067	.052	.039
16	.196	.185	.098	.084	.066	.051	.038

"W" 4-in. face brick and common brick.

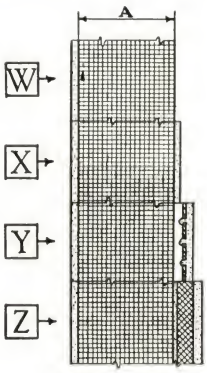
"X" brick, plaster.

"Y" brick, furring, lath and plaster.

"Z" brick, portland cement mortar backing, corkboard, plaster.



Thickness A, in.	Not insulated			Z, insulated with corkboard, in.				
	W	X	Y	1½	2	3	4	6
8	.385	.356	.261	.127	.106	.078	.059	.042
12	.295	.277	.216	.115	.098	.074	.056	.040
16	.238	.227	.184	.104	.090	.069	.053	.039
20	.190	.176	.153	.097	.081	.064	.050	.037
24	.162	.148	.126	.089	.074	.059	.047	.035



"W" stucco, hollow tile.

"X" stucco, hollow tile, plaster.

"Y" stucco, hollow tile, furring, lath and plaster.

"Z" stucco, hollow tile, portland cement backing, corkboard, plaster.

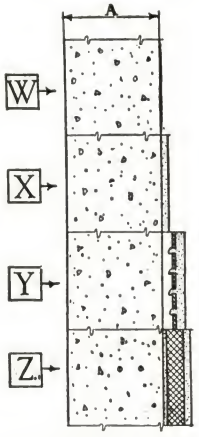
Thickness A, in.	Not insulated			Z, insulated with corkboard, in.				
	W	X	Y	1½	2	3	4	6
4	.515	.463	.411	.142	.113	.082	.061	.043
6	.419	.384	.346	.134	.107	.080	.059	.042
8	.317	.296	.228	.119	.099	.074	.057	.041
10	.304	.285	.221	.117	.093	.073	.058	.040
12	.241	.229	.186	.106	.090	.069	.053	.039

"W" concrete—1:3:5 mix.

"X" concrete, plaster.

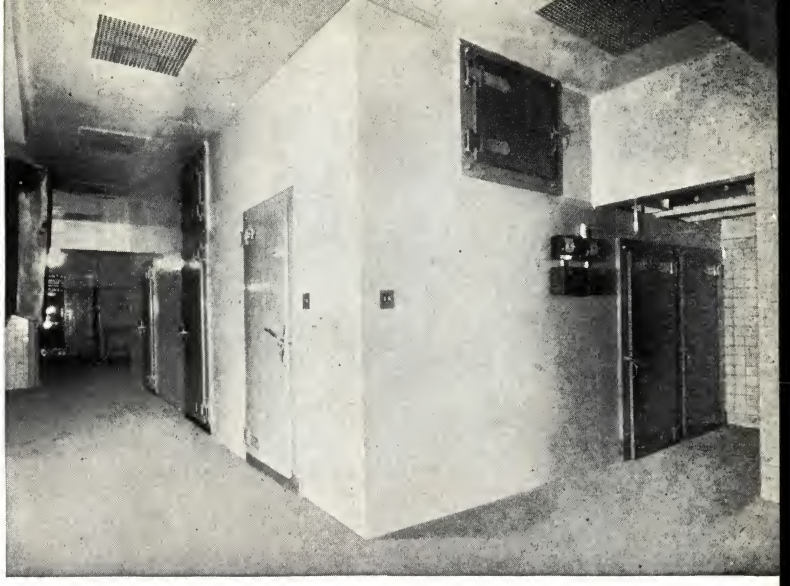
"Y" concrete, furring, lath and plaster.

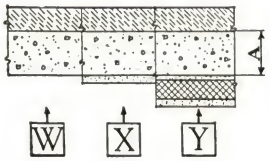
"Z" concrete, portland cement mortar backing, corkboard, plaster.



Thickness A, in.	Not insulated			Z, insulated with corkboard, in.				
	W	X	Y	1½	2	3	4	6
4	.641	.573	.367	.150	.120	.085	.062	.044
6	.583	.518	.339	.142	.116	.084	.062	.043
8	.512	.461	.314	.138	.113	.082	.061	.043
10	.455	.416	.292	.134	.110	.081	.060	.042
12	.411	.378	.273	.131	.106	.079	.059	.042
16	.343	.320	.241	.122	.102	.076	.057	.041
18	.319	.299	.228	.120	.099	.075	.057	.041
20	.294	.277	.216	.116	.097	.073	.056	.040

SPECIFICATIONS



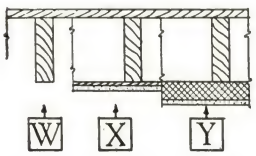


"W" finished (2-in.) concrete floor, reinforced concrete slab.

"X" finished floor, reinforced concrete slab, plaster finish.

"Y" finished concrete floor, reinforced concrete slab, portland cement mortar backing, corkboard, plaster.

Thickness A, in.	Not insulated		Y, insulated with corkboard, in.				
	W	X	1½	2	3	4	6
4	.461	.419	.135	.110	.081	.060	.042
5	.438	.400	.133	.109	.081	.060	.042
6	.417	.380	.131	.107	.080	.059	.042
7	.392	.363	.129	.106	.079	.059	.042
8	.378	.348	.127	.105	.079	.059	.042
10	.345	.322	.123	.103	.077	.058	.041



"W" single wood floor joists.

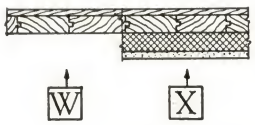
"X" single wood floor joists, lath and plaster.

"Y" single wood floor, corkboard, plaster.

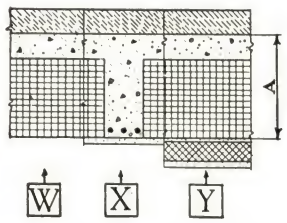
Not insulated		Y, insulated with corkboard, in.				
W	X	1½	2	3	4	6
.440	.272	.119	.100	.075	.057	.041

"W" finished wood floor (1 in.), mill constructed plank floor.

"X" finished wood floor, mill constructed plank floor, corkboard, plaster.



Not insulated W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.233	.108	.092	.070	.053	.039



"W" finished (2-in.) concrete floor, reinforced concrete joist and tile slab.

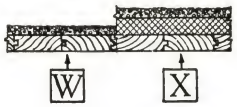
"X" finished floor, reinforced concrete joist and tile slab, plaster.

"Y" finished floor, reinforced concrete joist and tile slab, portland cement mortar backing, corkboard, plaster.

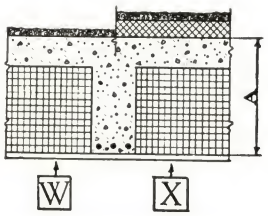
Thickness A, in.	Not insulated		Y, insulated with corkboard, in.				
	W	X	1½	2	3	4	6
5½	.621	.550	.150	.119	.085	.062	.043
8	.430	.359	.135	.111	.084	.062	.043
10½	.392	.321	.132	.106	.081	.060	.042
13	.370	.299	.129	.104	.079	.059	.042
15½	.271	.200	.114	.096	.074	.057	.041

"W" standard built-up roofing, mill construction plank roof.

"X" standard built-up roofing, corkboard, mill construction plank roof.



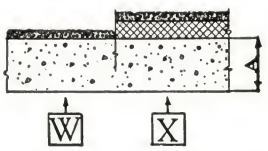
Not insulated W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.345	.126	.104	.077	.058	.041



"W" standard built-up roofing, reinforced concrete joists and tile slab, plaster.

"X" standard built-up roofing, corkboard, reinforced concrete joists and tile slab, plaster.

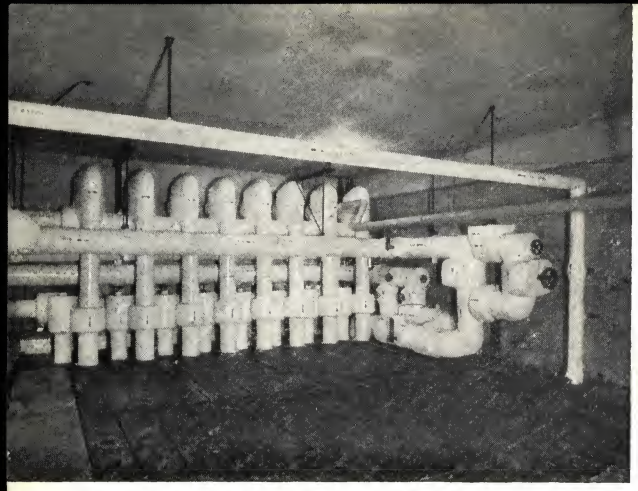
Thickness A, in.	Not insulated W	X, insulated with corkboard, in.				
		1½	2	3	4	6
5½	.515	.143	.116	.084	.062	.043
8	.456	.138	.113	.082	.061	.043
10½	.410	.133	.110	.081	.060	.042
13	.381	.130	.107	.080	.059	.042



"W" standard built-up roofing, reinforced concrete slab.

"X" standard built-up roofing, corkboard, reinforced concrete slab.

Thickness A, in.	Not insulated, W	X, insulated with corkboard, in.				
		1½	2	3	4	6
2	.658	.153	.122	.087	.063	.044
3	.610	.151	.120	.086	.063	.044
4	.568	.148	.119	.085	.062	.044
5	.532	.145	.117	.084	.062	.043
6	.500	.143	.115	.083	.061	.043
7	.472	.140	.113	.082	.061	.043
8	.447	.138	.112	.082	.060	.043



"Jointite" Moulded Cork Pipe Covering

All the insulating qualities of cork hereinbefore explained for cold storage, and its resistance to heat transmission generally, apply equally to its value as insulation for cold piping. It affords a most efficient and permanent means for protecting cold water, brine, and ammonia pipe lines and fittings.

"Jointite" Moulded Cork Pipe Covering is made of pure granulated cork compressed and moulded in forms and baked as described for corkboard. Following the baking process each piece of pipe covering is covered all over with a mineral rubber finish which prevents damage from moisture or frost.

Various moulded shapes are made both for pipe and fittings so that all parts of the pipe lines may be neatly and adequately covered.

Thickness		Clear space between pipes, in.	Clear space between pipes and walls, etc., in.
Brine	Screwed fittings under 6 in.	8	6
	Screwed fittings over 6 in. and flanged fittings	14	8
Special thick	Screwed fittings under 6 in.	10	8
	Screwed fittings over 6 in. and flanged fittings	18	12
Ice water thick	Screwed fittings under 6 in.	6	4
	Screwed fittings over 6 in. and flanged fittings	10	5

SPECIFICATIONS

Used for 75% of all Pipe Covering

SPECIFICATION A • • • **Pipe**—After the pipe lines have been tested and approved, they shall be insulated with "Jointite" [(1), (2) or (3)] Cork Pipe Covering. All contact joints shall be sealed with Mundet Waterproof Cement. All contact joints shall be butted closely and firmly together and secured with copper clad steel wire, spaced at intervals of not more than 6 in.

Fittings—The fittings shall be insulated with "Jointite" Moulded Cork Fitting Covers of a thickness to match the above pipe covering. All contact joints shall be sealed with Mundet Waterproof Cement. All joints shall be butted closely and firmly together and secured with not less than four copper clad steel wires. On all flanged fittings and on all screwed fittings larger than 6 in., not less than six wires shall be used.

Voids—All spaces between fittings and fitting covers shall be filled with Mundet Fitting Filler.

Seams—All seams and chipped edges in the fitting covers and pipe covering shall be filled with Mundet Seam Filler and the surface made smooth.

Finish—The entire outer surface of the insulation shall receive one coat of Mundet Finish Paint.

Hangers—Pipe Lines shall be supported, in every case, outside of the covering and shall be protected by carefully fitted metal shields extending 4 in. on each side of the hanger. The shield shall embrace the entire lower semicircle.

Spacing—Minimum spacing between pipes and adjacent surfaces shall be as given in the table at the top of this column.

Moist Air Conditions or Outdoor Use

SPECIFICATION B • • • **Pipe, Fittings, Voids, Seams**—*Note:* Specifications under these headings same as Specification A.

Roofing—After the seams have been filled, there shall be applied ... layers of ... ply smooth surfaced roofing. Each joint shall be lapped not less than 2 in. The laps shall be sealed with asphalt paint and secured with staples or copper clad steel wire. All laps shall be laid in such a manner as to form a watershed.

Finish, Hangers, Spacing—*Note:* Specifications under these headings same as Specification A.

Decorative Canvas or Paint Finish

SPECIFICATION C • • • **Pipe, Fittings, Voids, Seams**—*Note:* Specifications under these headings same as Specification A.

Canvas—After the seams have been filled, the pipe covering shall be wrapped with No. 8 Rosin Sized Paper, and the fittings shall be given a coat of asbestos cement, troweled on, and of sufficient thickness to give a smooth base for canvas. Over the pipe and fittings, a jacket of 8-oz. canvas shall be neatly sewn, using not less than three stitches to the inch. All seams shall be located along the line of minimum visibility.

Finish—The canvas jacket shall be sized and painted with two coats of lead and oil paint.

Hangers, Spacing—Specification under this heading, same as Specification A.

Low Temperature Piping

SPECIFICATION D • • • **Pipe, Fittings, Voids, Seams**—Specifications under these headings same as Specification A.

Membrane Jacket—Over the fittings there shall be applied a layer of mineral rubber cloth, lapped not less than 2 in. and sealed with asphalt paint. Starting with a 2-in. lap upon the fittings, the straight pipe shall be wrapped spirally with a layer of rubberized adhesive membrane tape lapped not less than 1 in.

Finish—Finish to be either as in Specification A or Specification C.

Hangers, Spacing—Specifications under this heading same as Specification A.

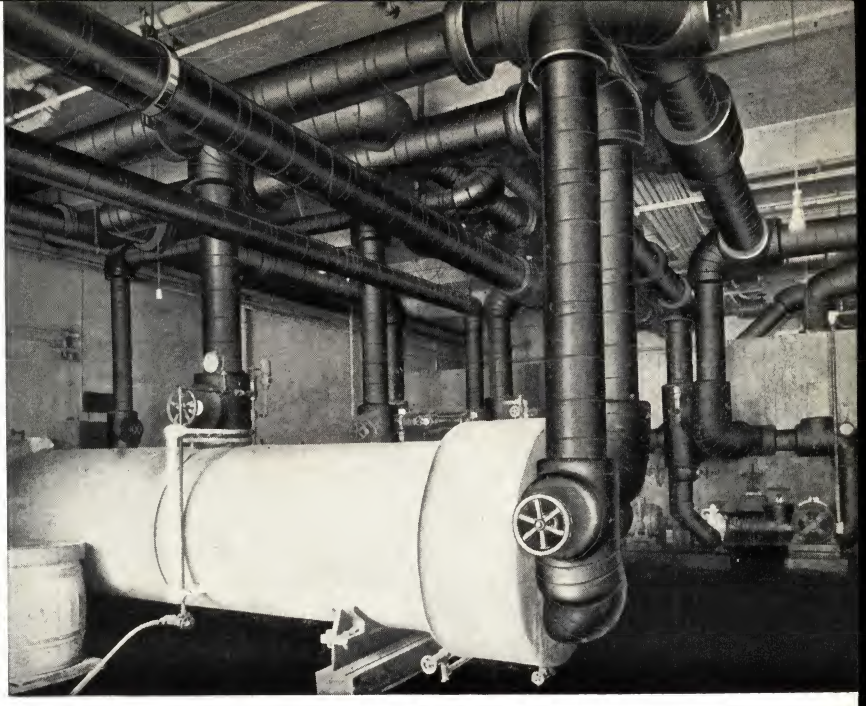
ICE PLANTS

Knickerbocker Ice Co., New York, N. Y.
Boston Ice Co., Boston, Mass.
City Ice & Fuel Co., St. Louis, Mo.

OFFICE BUILDINGS

New York Life Building, New York, N. Y.
Provident Mutual Life Ins. Building, Philadelphia, Pa.
Russ Building, San Francisco, Cal.

"Jointite" Cork Lagging



We manufacture beveled cork lagging and discs for the insulation of cylindrical tanks and coolers. The lagging is cut to order to any desired radius. If desired, the lagging can be furnished with a ⅛-in. mastic coating, ironed in at the factory. Shipment can be made within 24 hours after the order is received by our factory.

SUGGESTED THICKNESS

Note: The numbered items shown below are for covering of various standard thicknesses and for purposes as indicated. Reference will be made to this list in specification text.

2 in. of lagging (1) Above 40° F.
3 in. of lagging (2) Above 25° F. and below 40° F.
(3) Above 10° F. and below 25° F. 4 in. of lagging } Applied in
(4) Below 10° F. 6 in. of lagging } two courses

SPECIFICATIONS

SPECIFICATION E • • •

Note: This specification is usually used in conjunction with Specification A.

Lagging—*(1) Tank Surfaces*—After the cooler or tank has been tested and approved, the body of the tank shall be insulated with [see items (1), (2), (3) and (4)] ..... in. of "Jointite" Beveled Cork Lagging, applied in ..... courses. The first course shall be applied against the tank (with or without mineral rubber finish on the inside), with all contact joints firmly and securely butted together and sealed with Mundet Waterproof Cement. The lagging shall be further secured with copperclad steel wire spaced at intervals of not more than 6 in. (On tanks larger than 20" in diameter —outside measurement of cork—the lagging may be secured with No. 20-gauge galvanized spring steel bands ¾" wide applied with special flush type clips on 9" centers). The second course of lagging shall then be applied against the first course in the same manner as above with all joints in the lagging broken with respect to the first.

(2) Flanges—The flanges shall be insulated in the same manner as the tank surfaces. The flange lagging shall lap upon the body lagging for 12 in. and shall project beyond the outermost portion of the head, a distance equal to the thickness of the tank insulation.

Discs—The heads shall be insulated with "Jointite" Corkboard Discs of the same total thickness as the tank insulation (with or without mineral rubber finish on the inside ironed on at the factory). The discs shall be applied directly against the head of the tank and supported by the flange lagging.

Voids—Any spaces between the lagging and the tank body shall be filled with Mundet Fitting Filler. The spaces between the bolts and flanges shall be filled with Mundet Fitting Filler. The spaces between the heads and the flanges shall be filled with fine regranulated cork.

Finish—The entire outer surface of the insulation shall have a mineral rubber finish ironed on at the factory. After the insulation is completed all seams and chipped edges shall be filled with Mundet Seam Filler.

Painting—The entire outer surface shall receive one coat of Mundet Finish Paint.

SPECIFICATION F • • •

Note: This specification is often used in conjunction with Specification C.

Lagging, Discs, Voids, Finish—*Note:* Specifications under these headings same as Specification E.

Canvas—After the seams have been filled, the outer surface of the tank shall be covered with a layer of No. 8 Rosin Sized Paper. Over the paper shall be sewn a jacket of 8-oz. canvas. All seams shall be of the invisible type and shall have not less than three stitches to the inch.

Painting—The canvas shall be sized and painted with two coats of lead and oil paint.

SPECIFICATION G • • o

Note: This specification is very commonly used where a neat appearance, plus the ability to withstand a certain amount of rough usage is desired.

Lagging, Discs, Voids, Finish—Specifications under these headings same as Specification E.

Plaster—After the seams have been filled, the outer surface of the insulation shall be covered with a layer of 1-in. hexagonal mesh galvanized wire, securely stapled to the insulation. Over the wire shall be applied two coats of portland and asbestos cement plaster. The first coat shall be a rough or scratch coat; the second coat shall be troweled to a smooth and even finish.

Painting—Optional.

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Roof Insulation

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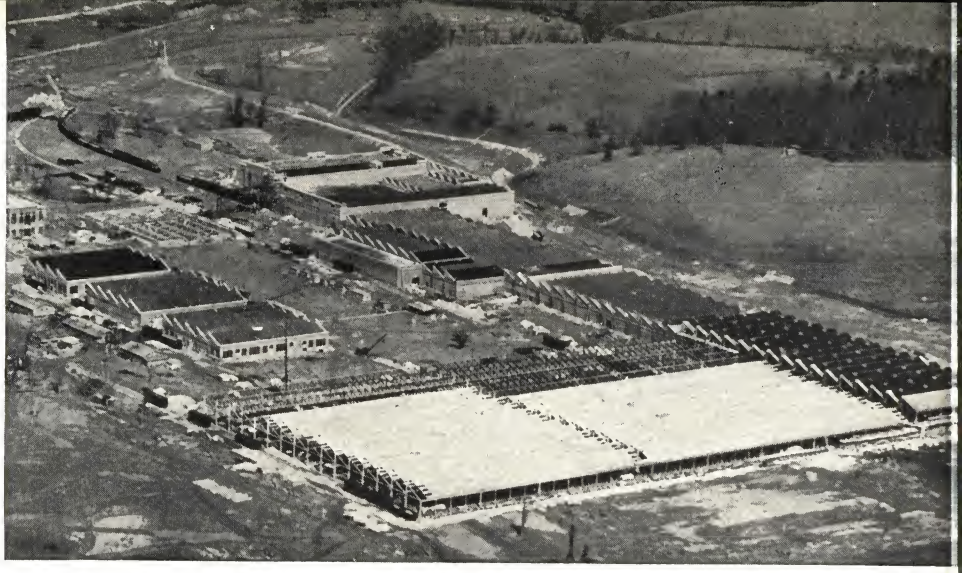

To Prevent Condensation •

It is generally recognized today that correct building design must include insulation. The heat transmitted from uninsulated roofs in the winter results in a needless loss, the cost of which comes to a staggering total. Furthermore, the annoying and frequently expensive problem of ceiling condensation may be easily overcome.

In the summer, these same roofs absorb a tremendous amount of heat and deliver it to the rooms below, thus causing discomfort to, and impairing the efficiency of, people who are working in these areas. In certain commercial plants where the humidity and often the temperature must be governed at a high point, due to the processes of manufacture, an uninsulated roof will inevitably chill the air in its vicinity during the winter months to the point where some of its moisture condenses and forms what is commonly known as ceiling "sweat." The moisture drops to the floor, producing a most annoying condition to people who are working in the room and often causing damage to property, since it will drop upon any materials and machinery that may be underneath. The loss due to condensation must be considered separately from the direct loss due to heat leakage through the roof, the latter being present in all uninsulated construction while the former appears only when the humidity is relatively high or when the difference in temperature between the inside of the roof and the room is of considerable magnitude.

Numerous industries are in the position of, for example, textile mills, which have, as one of the prerequisites for proper manufacturing, a high degree of relative humidity. Many textile mills are located in New England, and in winter are operating with a great variation between the inside and outside temperatures of their buildings. Unless these buildings are insulated, the walls and roofs become very much colder, on the inside, than the surrounding air. This cold is transmitted to the adjacent air, which reaches the point of total saturation (dewpoint), and deposits its moisture upon the cold surfaces, from which come the drip. The resultant losses may be grouped as follows:

(1) Direct losses.
  (a) Heat transmitted through roof and walls.
  (b) Damage to goods in process of manufacture.
  (c) Decreased efficiency of labor.
(2) Indirect losses.
  (a) Damage to machinery.
  (b) Deterioration of buildings, particularly of wooden construction.
  (c) Lowered morale of labor due to unpleasant working conditions.

Unfortunately, it is only recently that industry has begun to subject its inherited losses to a careful scrutiny. In the past, ceiling condensation was regarded as a necessary evil, and an inevitable concomitant of high relative humidity. Advanced engineering practice in new buildings, however, has demonstrated its worth to the point where manufacturers have begun to realize that their old equipment cannot compete with new equipment unless it is brought up to date. However, the tendency to maintain a given status quo, plus the inhibition against spending money upon old equipment, has produced a considerable inertia. It is for this reason that all roofs are not insulated, although there have been instances without number where cork insulation has been installed in an existing plant and has paid for itself within a few years in the single item of coal required for heating.

When bringing to the attention of manufacturers the need for cork insulation in buildings, the greater stress has been laid upon the resultant saving in fuel. Today, however, industrial executives in ever increasing numbers are realizing that a most important factor in their problem of keeping costs at a minimum is the attitude of their labor. A worker is never efficient when he is uncomfortable, and therefore the use of insulation, while it may be considered as an intangible benefit from this angle, is nevertheless of vital import.

The other factors that go to make up the losses in uninsulated construction depend entirely upon individual conditions, and it is difficult to evaluate them in general terms, but it is reasonable to conclude that they are present in all cases to a greater or less degree and must eventually appear in the costs of manufacture.

Mention was made, in the foregoing text, of the losses caused by condensation in the textile industry; but it must not be assumed that this industry stands alone. Below are listed a number of types of buildings that are prone to condensation troubles.

Bakeries
Creameries
Laundries
Lumber drying rooms and kilns
Packing houses
Killing rooms
Paper mills
Power houses
Swimming pools
Textile mills—cotton, wool and silk
Tobacco factories
Turkish baths
Twine mills

Thickness of Corkboard Needed

It has already been shown that cork is the ideal insulation for this work. The next important thing to determine is the thickness of corkboard that must be used.

There is no rule of thumb by which it is possible to determine what thickness of cork insulation is required for any given roof. The thickness of insulation is an exact function of the humidity present, the nature of the wall or roof construction, its own co-efficient of heat transmission, and the maximum temperature difference on the two sides of the building construction. In order to facilitate the determination of the correct thickness of corkboard insulation for roofs, a special chart has been included in this section (see page 17) upon which it is possible to read directly the permissible heat loss for any given set of conditions. Upon page 16 will be found a table showing the heat loss of all common types of roof construction. Under each type is shown the heat loss of that construction with various thicknesses of "Jointite" Corkboard Insulation. Typical cases are also shown graphically in illustrations on page 11.

The easiest way of demonstrating the use of the chart, table and illustrations will be to show the working of an actual case. Following is a typical problem: A manufacturing plant is equipped with a 3-in. yellow pine roof and standard 5/8-in. built-up roofing. The inside temperature (dry bulb) at the ceiling is 70° F., the relative humidity is 80%, and the lowest temperature during the winter is minus 10° F.

Locate the line of 70° upon the room temperature scale at the top of the chart and follow down to the 80% relative humidity diagonal. Follow horizontally across the chart to the line of 80° maximum temperature difference on the lower scale. Interpolation between the bounding heat loss diagonal lines will show the heat loss to be .124. Referring to the heat transmission table, we find that in connection with a 3-in. yellow pine roof and 5/8-in. built-up roofing, 1½ in. of Mundet "Jointite" Corkboard will give sufficient insulation to preclude the possibility of condensation for the above set of conditions.

SPECIFICATIONS

Note: The following specifications will be found to cover the usual typical cases of roof insulation:

1

On Wood Deck Construction

On top of wood deck, first apply a single layer of .... roofing felt laid in hot asphalt with joints lapped 3 in. Following this lay one course of .... in. Mundet "Jointite" Corkboard, laid in a heavy mop coat of hot asphalt, the exposed cork surfaces to be left dry, ready for the application of the roofing.

2

Over Concrete Construction

On top of the concrete roof slab first apply two coats of asphalt primer, following which .... in. Mundet "Jointite" Corkboard is to be laid in a heavy mop coat of hot asphalt, the exposed cork surfaces to be left dry, ready for the application of the roofing.

3

Over Steel Roof Decks

On top of steel deck lay one course of .... in. Mundet "Jointite" Corkboard, laid in a heavy mop coat of hot asphalt, the exposed cork surfaces to be left dry, ready for the application of the roofing.

Note: Should roof insulation consist of two-layer work, the second course shall be applied on top of the first course in a dip coat of hot asphalt, with all transverse joints broken.

●

BREWERIES

P. Ballantine & Son, Newark, N. J.
F. & M. Schaefer Brewing Co., Brooklyn, N. Y.
Wm. Simons Brewing Co., Buffalo, N. Y.
Superior Brewing Co., Fort Worth, Texas
Jackson Brewing Co., New Orleans, La.
Globe Brewing Co., San Francisco, Cal.
Hyde Park Breweries Assoc., St. Louis, Mo.
Stroh Brewing Co., Detroit, Mich.

Users of Mundet

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Heat Transmission

TABLE SHOWING HEAT LOSSES THROUGH ROOFS

Construction	Transmission in B.t.u. per sq. ft. per degree difference in temperature per hour
2-in. concrete slab and roofing, no insulation	.658
2-in. concrete slab and roofing, 1 -in. Jointite Corkboard	.206
2-in. concrete slab and roofing, 1½-in. Jointite Corkboard	.153
2-in. concrete slab and roofing, 2 -in. Jointite Corkboard	.122
2-in. concrete slab and roofing, 3 -in. Jointite Corkboard	.087
2-in. concrete slab and roofing, 4 -in. Jointite Corkboard	.067
3-in. concrete slab and roofing, no insulation	.610
3-in. concrete slab and roofing, 1 -in. Jointite Corkboard	.201
3-in. concrete slab and roofing, 1½-in. Jointite Corkboard	.151
3-in. concrete slab and roofing, 2 -in. Jointite Corkboard	.120
3-in. concrete slab and roofing, 3 -in. Jointite Corkboard	.086
3-in. concrete slab and roofing, 4 -in. Jointite Corkboard	.067
4-in. concrete slab and roofing, no insulation	.568
4-in. concrete slab and roofing, 1 -in. Jointite Corkboard	.197
4-in. concrete slab and roofing, 1½-in. Jointite Corkboard	.148
4-in. concrete slab and roofing, 2 -in. Jointite Corkboard	.118
4-in. concrete slab and roofing, 3 -in. Jointite Corkboard	.085
4-in. concrete slab and roofing, 4 -in. Jointite Corkboard	.066
6-in. concrete slab and roofing, no insulation	.500
6-in. concrete slab and roofing, 1 -in. Jointite Corkboard	.187
6-in. concrete slab and roofing, 1½-in. Jointite Corkboard	.143
6-in. concrete slab and roofing, 2 -in. Jointite Corkboard	.115
6-in. concrete slab and roofing, 3 -in. Jointite Corkboard	.083
6-in. concrete slab and roofing, 4 -in. Jointite Corkboard	.065
2-in. Yellow Pine and roofing, no insulation	.345*
2-in. Yellow Pine and roofing, 1 -in. Jointite Corkboard	.160
2-in. Yellow Pine and roofing, 1½-in. Jointite Corkboard	.127
2-in. Yellow Pine and roofing, 2 -in. Jointite Corkboard	.105
2-in. Yellow Pine and roofing, 3 -in. Jointite Corkboard	.078
2-in. Yellow Pine and roofing, 4 -in. Jointite Corkboard	.062
3-in. Yellow Pine and roofing, no insulation	.256*
3-in. Yellow Pine and roofing, 1 -in. Jointite Corkboard	.138
3-in. Yellow Pine and roofing, 1½-in. Jointite Corkboard	.112
3-in. Yellow Pine and roofing, 2 -in. Jointite Corkboard	.095
3-in. Yellow Pine and roofing, 3 -in. Jointite Corkboard	.072
3-in. Yellow Pine and roofing, 4 -in. Jointite Corkboard	.058
Sheet steel deck, no insulation	1.000†
Sheet steel deck and roofing, 1 -in. Jointite Corkboard	.231
Sheet steel deck and roofing, 1½-in. Jointite Corkboard	.167
Sheet steel deck and roofing, 2 -in. Jointite Corkboard	.130
Sheet steel deck and roofing, 3 -in. Jointite Corkboard	.091
Sheet steel deck and roofing, 4 -in. Jointite Corkboard	.067
4-in. hollow tile, ⅝-in. roofing, no insulation	.485‡
4-in. hollow tile, ⅝-in. roofing, 1 -in. Jointite Corkboard	.187
4-in. hollow tile, ⅝-in. roofing, 1½-in. Jointite Corkboard	.142
4-in. hollow tile, ⅝-in. roofing, 2 -in. Jointite Corkboard	.114
4-in. hollow tile, ⅝-in. roofing, 3 -in. Jointite Corkboard	.083
4-in. hollow tile, ⅝-in. roofing, 4 -in. Jointite Corkboard	.065
6-in. hollow tile, ⅝-in. roofing, no insulation	.398‡
6-in. hollow tile, ⅝-in. roofing, 1 -in. Jointite Corkboard	.171
6-in. hollow tile, ⅝-in. roofing, 1½-in. Jointite Corkboard	.133
6-in. hollow tile, ⅝-in. roofing, 2 -in. Jointite Corkboard	.109
6-in. hollow tile, ⅝-in. roofing, 3 -in. Jointite Corkboard	.080
6-in. hollow tile, ⅝-in. roofing, 4 -in. Jointite Corkboard	.063

*On yellow pine, nominal thickness specified, actual thickness used in tests.
†Factor as furnished by the Truscon Steel Co.
‡½-in. plaster on underside and 2-in. concrete roof slab over tile is assumed.

USE OF CHART

Locate the room temperature on Room Temperature Scale at top of chart and follow down on the corresponding line to its intersection with the line which represents the required humidity percentage, finding this point by interpolating, if necessary, on that segment of the vertical line between the diagonal lines, to obtain any required intermediate percentage between those shown in the left-hand column. For the sake of explanation the horizontal line so found will be referred to as the "humidity horizontal" for any particular case in point.

Next, determine the point of maximum difference in temperature on the scale at the bottom of the chart and follow up on the corresponding vertical line until it intersects the "humidity horizontal" and consider the point of intersection as point "A." Note where point "A" lies between two of the diagonal lines which represent amount of heat loss, and by interpolation between these light lines determine its value as compared to the figures in the right-hand column. The value so found will be the maximum allowable heat loss.

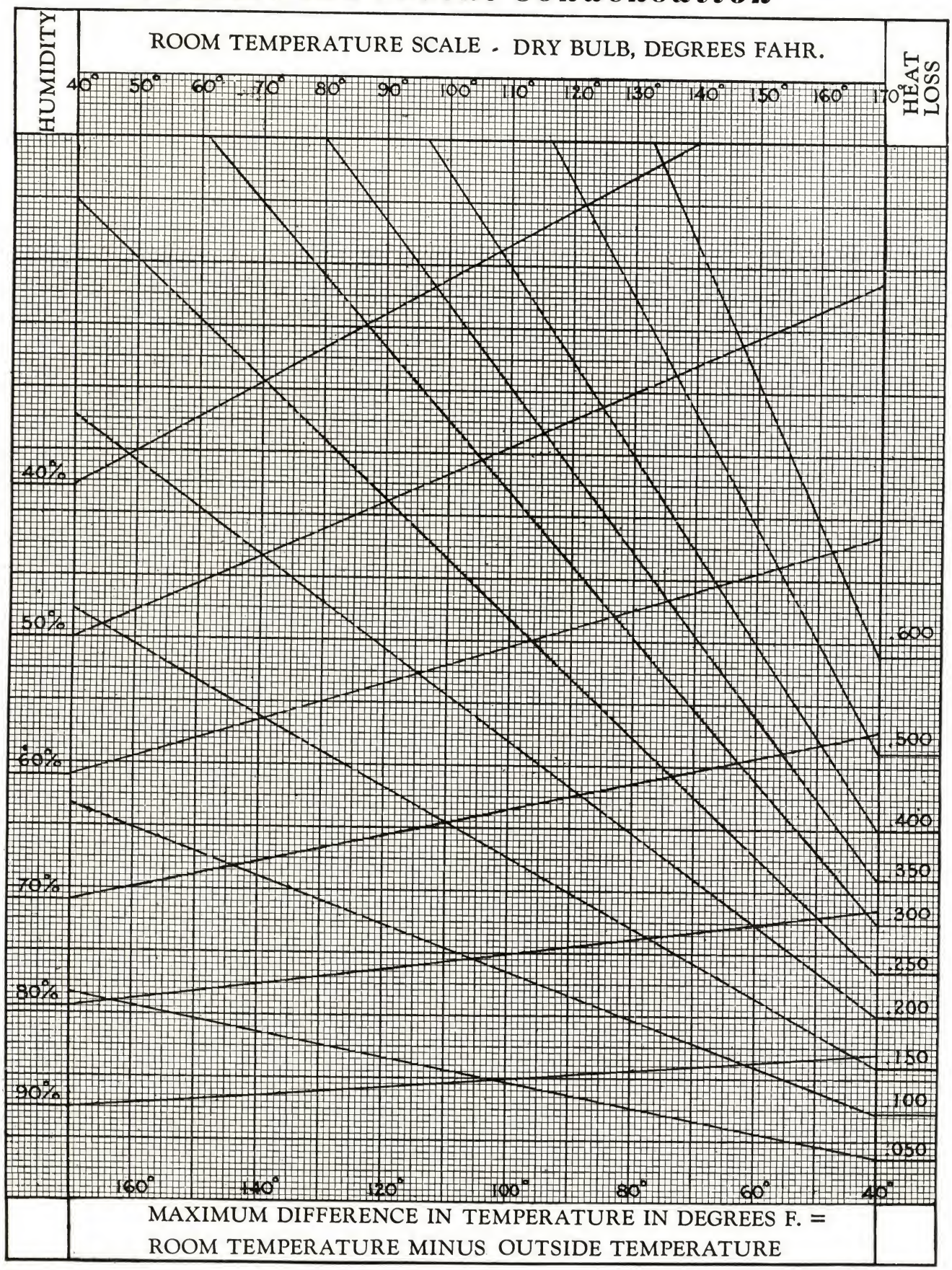
Determine from the Table of Heat Loss the thickness of insulation which will show a heat loss less than the value of "A" using the section of the table which shows the proposed type of construction combined with the insulation.

See also typical construction details showing heat loss tabulation.

Mundet Acoustical Corkboard performs a dual function in this church. In addition to furnishing necessary acoustical correction it insulates the ceiling

HEAT LOSS CHART

For Determining the Maximum Allowable Heat Loss in Roofs to Prevent Condensation



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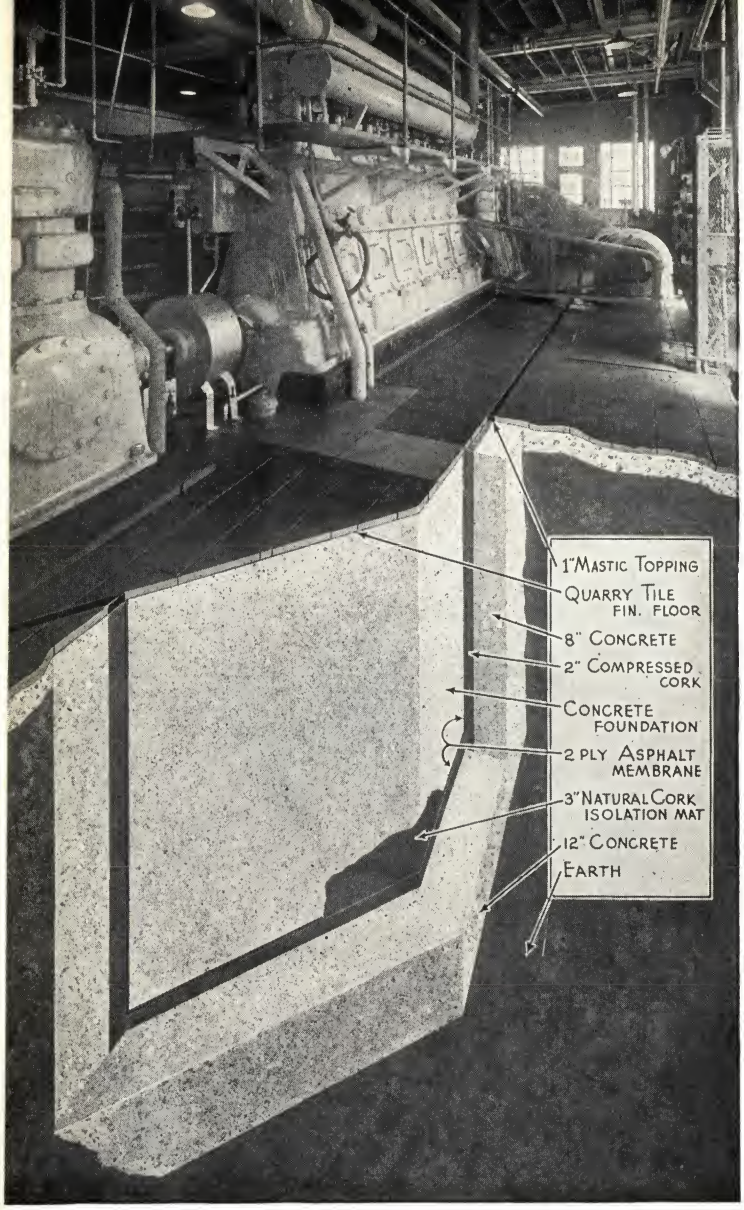

Vibration Isolation • • •

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Among the multitudinous uses to which cork has been applied, the one which is expanding most rapidly at the present time is the utilization of its peculiar physical characteristics in the elimination of machine vibration.

The principal characteristics of a medium for machinery isolation in the order of their importance, are:

(1) Ability to support the loads imposed upon it without too great, *or too variable,* a deflection.

(2) Ability to absorb vibration in the machine without transmitting it to the surrounding structure.

(3) Permanence, including ability to withstand repeated loading without fatigue or permanent set, ability to withstand the action of water, oil, acids or alkalis without deterioration, ability to maintain its resilience with age.

Of the many materials that have been used for isolation purposes at one time or another, cork has proved itself to be pre-eminently fitted for this work. It contains over 50% air by volume, and is made up of a myriad of tiny cells, hermetically sealed from each other by the structure of the wood. Its compression curves, therefore, resemble more nearly those of a gas than of an elastic solid, as is evident on page 19. This feature is important, because the resistance to loads, instead of being proportional to the amount of deflection, is proportional to the compression in the air cells; hence, under vibratory variations in loading, the active deflection is much smaller than for an elastic substance, while the cushioning effect is higher.

Cork isolation has proven itself under the pragmatic test of use, and many thousands of installations, some of them over a quarter of a century old, are giving complete satisfaction; often making possible the use of machines which without it could not be used in their present locations because of the vibration accompanying their operation.

Type of Cork Isolation to Use

Mundet Cork Isolation is made in two general types to conform with the class of loadings imposed upon it. They are as follows:

(1) Mundet Natural Cork Isolation Mat—This form of cork isolation is suited to loads of about 800 to 2000 lb. per sq. ft., normally encountered in machinery foundations. Blocks of natural cork of the required thickness are held within a rigid steel frame or are bound with asphalt paper applied in hot asphalt to the top and bottom sides of the strips. The plates when laid together form a continuous mat isolation of the exact size necessary. For isolating a machine in a pit with an envelope of cork, as shown in the illustration herewith, it is customary to use asphalt paper bound natural cork isolation mat. Where the machine is mounted on a floor slab without side isolation, it is customary to use steel bound natural cork isolation mat.

In the case of average machine vibrations 1½ to 2 in. of natural cork is adequate, but for more intense vibrations or shock loads, the thickness should be increased to 3 or 4 in.

(2) Mundet Machinery Isolation Cork—This is the material first used as isolation cork and, while it has been superseded by the above material for light and medium loads, for loads above 2000 lb. per sq. ft., Mundet Machinery Isolation Cork has not been surpassed. This cork is made in sheets, of various thicknesses, and in three densities, namely, light, medium and heavy.

For loadings of 2000 to 3000 lb. per sq. ft., it is customary to use either light or medium density, according to the character of the vibration. Light density is used for light vibrations and medium density for heavy vibrations. From 3000 to 3500 lb. per sq. ft., either medium density or heavy density is used, according to the character of the vibratory load, and from 3500 to 6000 lb. per sq. ft., it is customary to use heavy density. The thicknesses of machinery isolation cork used depend upon the frequency and amplitude of the vibration present, but the most common thicknesses employed are 1½, 2, 3 and 4 in.

PROVISION PLANTS

Lehman Packing Co., Brooklyn, N. Y.
Wm. A. Donnelly, Philadelphia, Pa.
Western Produce Co., Abilene, Tex.
Hildebrandt Provision Co., Cleveland, Ohio
International Produce Co., Chicago, Ill.
Providence Produce Terminal, Providence, R. I.

Specifications and Information on the Selection of MUNDET ISOLATION CORK

●

Machinery Isolation Cork is composed of granules cemented together in the process of manufacture which is the same as that of corkboard. It contains more cork per cubic foot than the natural cork isolation mats. It is structurally strong, but must have a higher initial loading than natural cork isolation mat before it equals the latter in efficiency as an isolation medium. The densities in pounds per cubic foot are:

Light, 1.00-1.30; Medium, 1.30-1.50; Heavy, 1.50-1.70. A special 1.80-1.90 density is available for severe vibrations combined with exceptionally heavy loads, but this should be used sparingly.

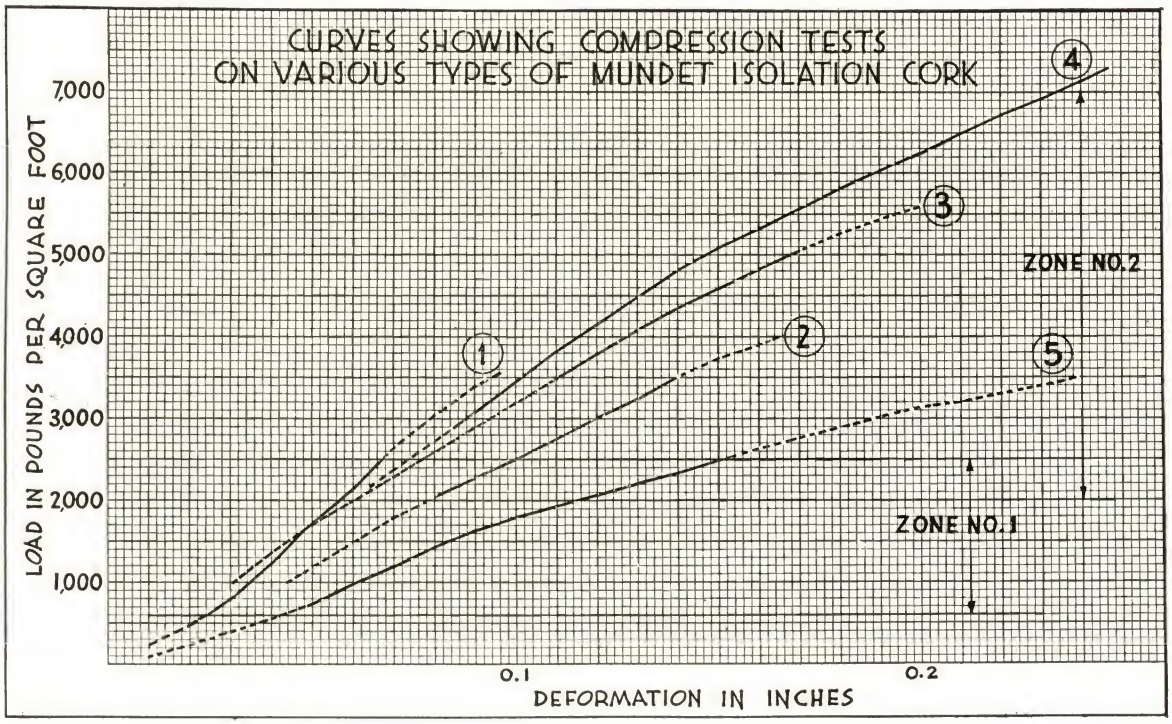
Shipment—All of the isolation listed is carried in stock with the exception of steel board of Mundet Natural Cork Isolation Mat, and any type of isolation, whether granulated or natural mat, can be shipped within 48 hours after the receipt of an order by our factory. Mundet Machinery Isolation Cork is stocked in our various branch warehouses for immediate shipment.

Specification for the Installation of Mundet Cork Isolation

(In a pit where monolithic concrete base is to be cast upon the cork.)

The sides and bottom of all machinery pits which are to receive isolation shall be true and even, as well as clean, smooth and dry, before cork isolation is applied.

The sides and bottom of all machinery foundation pits shall be lined with a layer of Mundet (*specify type of cork*). Bottom isolation shall be ..... in. thick and side isolation shall be ..... in. thick. The side and bottom cork shall be laid in a heavy mop coat of hot asphalt and the exposed surfaces protected with two layers of waterproofing felt, mopped in, with all edges lapped at least 6 in.



The above chart is included to assist the designer in selecting isolation cork. The curves are numbered and correspond to test pieces as follows:

(1) Mundet Natural Cork Isolation Mat—1½ in. thick.

(2) Mundet Machinery Isolation Cork—light density—2 in. thick.

(3) Mundet Machinery Isolation Cork—medium density—2 in. thick.

(4) Mundet Machinery Isolation Cork—heavy density—2 in. thick.

(5) Mundet Natural Cork Isolation Mat—3 in. thick.

The thicknesses selected are those most commonly used in general practice. Curve No. 6 is included primarily to show that the amount of compression varies directly with the thickness of isolation used. This is true of all forms of cork isolation. Vibration absorption also varies approximately with thickness of isolation used.

The chart is divided into zones which show the recommended load limits. The curves are shown as solid lines within the zone limits, and their behavior outside of these limits is shown by the dotted extensions.

Zone No. 1 is for Mundet Natural Cork Isolation Mat.

Zone No. 2 is for Mundet Machinery Isolation Cork.

Mundet cork has been tested for static loads up to 15,000 lb. per sq. ft. Further information upon this subject is available. Our Engineering Department will co-operate in the design of machinery vibration isolation. A request directed to the Company or our nearest branch office will receive prompt and competent attention.

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EHRET MAGNESIA MANUFACTURING CO.

VALLEY FORGE, PA.

NEW YORK PHILADELPHIA CHICAGO

For Ehret's Heat Seal Insulating Wool, see File Index

EHRET'S 85% MAGNESIA INSULATIONS

The EHRET MAGNESIA MANUFACTURING Co. has specialized in the manufacture of 85% Magnesia for forty years. The manufacturing facilities include every improved process to insure and maintain the highest quality product as well as sufficient capacity to handle the largest orders expeditiously. The basic raw material used in the manufacture of Ehret's 85% Magnesia is obtained in their own quarry at which the factory is located.

Ehret's 85% Magnesia is a composition of very pure hydrated carbonate of magnesia and especially selected asbestos fibre in the approximate proportions of 85% of the magnesia content and 15% of the asbestos binder.

The hydrated carbonate of magnesia is manufactured from rich Dolomite Rock by chemical processes. The resulting product consists of very light weight flocculent crystals which are inert and of an everlasting and unchanging nature up to 600° F. The average chemical formula for this is 4 Mg CO_3. Mg O_2H_2. 5 H_2O.

Briefly, the principal steps in the manufacturing method are as follows. The Dolomite Rock is calcined, or burned, with coke in special kilns. The resulting product is submitted to a prolonged slaking with a large volume of water. Carbonic acid gas, a by-product of the kiln process, is then saturated through the mixture, which dissolves the magnesia content. When this is filtered off all unwanted solid matter is eliminated. Boiling this clear liquid causes the magnesia crystals to form.

Ehret's 85% Magnesia Pipe Covering

Ehret's 85% Magnesia Block

Manufacturing Processes

The processing of the magnesia into the shapes and forms has also been brought to a high stage of perfection by the EHRET MAGNESIA MANUFACTURING Co. The asbestos fibre is carefully selected and graded and is mixed in at the proper proportions to give the best bonding effect. The mixture is then conveyed through pipes and is forced by hydraulic pressure into special moulds from which the excess water escapes. These moulds form the various sizes of pipe coverings and flat blocks. The residual moisture is thoroughly dried out during a period of several days.

The rough moulded pieces are made over-dimensioned so as to allow for final machine finishing. This operation removes any warp due to drying, and produces coverings accurate to size and with smooth clean surfaces. Canvas jackets are then applied as needed, and the product is ready for use.

The skillful regulation of the hydraulic pressure used in making the rough moulded forms absolutely controls the density and uniformity of the sections. Experiment and practice have taught how this control will produce the best product.

THICKNESS RECOMMENDATIONS, INDOORS

Page size	Temperature of hot surface—° F.									
	Under 300	301 to 400	401 to 500	501 to 600	601 to 700		701 to 800		801 to 900	
	85% Magnesia				Endura	Magnesia	Endura	Magnesia	Endura	Magnesia
Under 2"	Std.	1½	2	2	2	...	2	..	2	...
2" to 4" incl..	Std.	1½	2	2	1½	1½	1½	2	2	2
4½" to 6" incl.	Std.	2	D.S.	D.S.	1½	2	1½	2	2	2
7" and over ..	Std.	2	D.S.	D.S.	1½	2	2	2	2	2½
Flat surface .	1½	2	2½	3	1½	2	2	2	2	2½

Why Ehret's 85% Magnesia Should Be Specified

Selection of type of insulation material for heating and hot water plumbing systems in architectural specifications is just as important as for power plants and industrial work.

In specifications for the latter, it is universal practice to use 85% Magnesia, except for high temperature conditions. In either case the object should be to obtain the best results over the longest period of time.

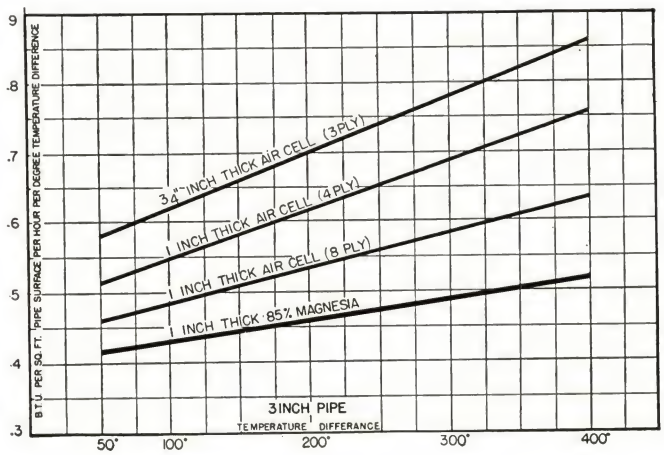
Ehret's 85% Magnesia is virtually a mass of minute dead air cells which are the fundamental basis for an efficient thermal insulation. These air cells are formed by the crystalline flakes which are forcibly and permanently interlocked by the special hydraulic pressure moulding process.

Not only do these dead air cells give Ehret's 85% Magnesia a very high efficiency but the durable nature of the magnesia itself guarantees the insulation value indefinitely.

Ehret's 85% Magnesia is only slightly higher in first cost than the various forms of asbestos paper cellular coverings. However, due to the much smaller heat savings and short durability the asbestos cellular types are far more costly in the end.

The chart below clearly indicates the smaller heat losses through 85% Magnesia as compared with several types of the asbestos paper forms. Furthermore, this comparison shows the initial insulation value.

The increase of heat losses from the cellular types grows progressively greater with time. 85% Magnesia remains the same and in some tested cases has shown less loss with age.



Some Other Ehret Products

Packings—Refractory Cements, Durocel Insulating Brick. Asbestos Products of all kinds.

ESTABLISHED 1873

THE PHILIP CAREY COMPANY

Manufacturers of Heat Insulation and Asbestos Products

LOCKLAND, CINCINNATI, OHIO

ATLANTA, GA.
BALTIMORE, MD.
BIRMINGHAM, ALA.
BOSTON, MASS.
BUFFALO, N. Y.
CHARLOTTE, N. C.
CHATTANOOGA, TENN.
CHICAGO, ILL.
CINCINNATI, OHIO
CLEVELAND, OHIO
COLUMBUS, OHIO
DALLAS, TEX.
DAYTON, OHIO
DETROIT, MICH.
INDIANAPOLIS, IND.
JACKSONVILLE, FLA.
KANSAS CITY, MO.
KNOXVILLE, TENN.
LOS ANGELES, CAL.
LOUISVILLE, KY.
MEMPHIS, TENN.
MINNEAPOLIS, MINN.
NASHVILLE, TENN.
NEW YORK, N. Y.
NORFOLK, VA.
PHILADELPHIA, PA.
PITTSBURGH, PA.
ST. LOUIS, MO.
SEATTLE, WASH.
WASHINGTON, D. C.
WHEELING, W. VA.

For pages on Carey Built-up Roofing, Shingles and Home Insulation, see File Index

CAREYCEL, AN IMPROVED ASBESTOS HEAT INSULATION PRODUCT

Product

CAREYCEL is a new, improved, asbestos heat insulation product, in the form of sections for covering pipe; also blocks and sheets for insulating ducts, furnace casings, oven walls, and similar equipment where the temperature does not exceed 300° F. It is designed primarily for insulating heating systems.

Carey PRODUCTS
REG. U.S. PAT. OFF.
TRADE-MARK

No Shrinkage

The elimination of heat shrinkage does away with wasteful and unsightly heat shrinkage cracks so often found in asbestos pipe coverings. Laboratory tests show maximum heat shrinkage of 0.05%.

Sturdier Construction

Illustration shows the compact, laminated structure. This gives more body and greater resistance to damage than is found in the conventional, cellular, Air Cell type of structure.

Smooth Finish

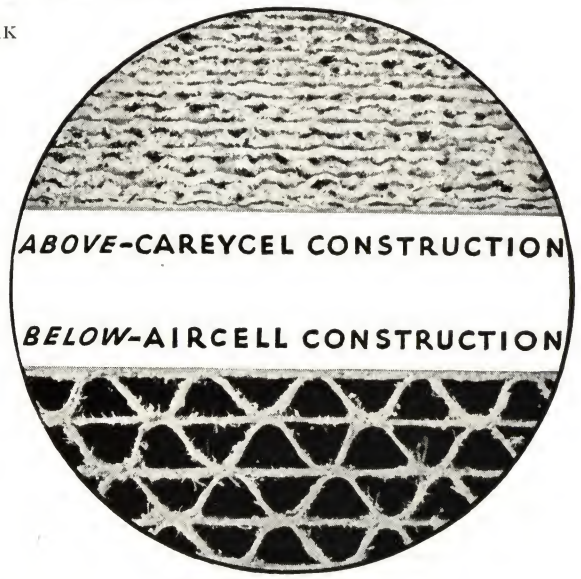
The laminated structure eliminates the ridged, unsightly appearance so often found in inexpensive, low pressure insulation.

Increased Efficiency

The exclusive patent process of "cellizing" the asbestos felt produces innumerable, very small, enclosed air cells, resulting in heat conductivity approximately 30% lower than through the conventional corrugated Air Cell type of structure. See test data (Mellon Institute) in next column.

Low Cost

All the advantages of CAREYCEL are available without a price premium. It sells in the price range of the lowest price cellular asbestos coverings.



THERMAL CONDUCTIVITY

B.t.u. per Hour per Square Foot per ° F. per Inch Thickness			
Mean Temperature ° F.	100° F.	150° F.	200° F.
Approximate metal temperature	125° F.	195° F.	260° F.
Careycel	0.377	0.410	0.443
Standard Air Cell (4-ply per inch)....	0.531	0.590	0.650

HEAT INSULATION SPECIFICATIONS

Boilers—Residential—Steam or Hot Water—Cover with 1-in. thick 85% Magnesia Blocks re-enforced with wire mesh and finish with ½-in. thickness Carey No. 100 Hard Finish Asbestos Cement, troweled smooth.

Boilers — Commercial — *Low Pressure Steam* — Cover all steam heated portions of the boiler with 1½-in. thick 85% Magnesia Blocks, firmly wired in place and finished with a ½-in. thick coat of Carey No. 100 Hard Finish Asbestos Cement, reenforced with hexagonal wire mesh, and troweled smooth.

Boilers — Commercial — *Over 100 Lbs. Steam Pressure*—Cover all boiler drums and drum ends, and other steam heated portions of the boiler with 2-in. thick 85% Magnesia Blocks, firmly wired on and finished with a ½-in. thick coat of Carey No. 100 Hard Finish Asbestos Cement, reenforced with hexagonal wire mesh and troweled smooth.

Boiler Walls—In brick wall construction install between fire brick and red brick, 3-in. thickness of Hi-Temp. No. 19 Blocks in two layers, each 1½-in. thick, and erected to break joints. On water walls apply a first layer of 3-in. thick Hi-Temp No. 19 Blocks and a second layer of 1-in. thick 85% Magnesia Blocks erected to break all joints. Finish with panels of CAREYCEL Insulated Sheathing erected according to manufacturer's specifications.

Smoke Flue—Commercial Boilers—*External Insulation*—On flue connections from boiler to smoke stack apply 2-in. thick 85% Magnesia Blocks over either V-rib expanded metal lath or pencil rods to which the Blocks shall be firmly wired. Finish with a ½-in. thick coat of Carey No. 100 Hard Finish Asbestos Cement, reenforced with hexagonal wire mesh, and troweled smooth.

Internal Insulation—To internal surfaces of boiler breechings apply 2-in. thick Carey Hi-Temp No. 12 Block stuck to metal with Carey Fibrous Adhesive and held in place with ⅜-in. stove bolts, at least two per block. These stove bolts shall be welded to the breeching and extend through the block. Apply expanded metal lath over the block, fastening it in place by washers and nuts on the stove bolts. Over blocks apply two ⅜-in. thick coats of Carey Vitricel Cement applied according to manufacturer's instructions.

Economizer and Air Preheater Ducts—Line with 2½-in. thick Carey Hi-Temp No. 19 Blocks applied as specified for breeching insulation. Finish with two ⅜-in. thick coats of Carey Vitricel Cement applied according to manufacturer's instructions.

Steel Stack Insulation—Insulate the interior of the steel stack with Carey Vitricel Sheets, 2-in. thick, curved to fit the stack diameter. Stack contractor shall apply, on 36½-in. centers for the height of the stack, angle iron rings, 1½x1½x$\frac{3}{16}$ in., punched with ¼-in. holes on 12-in. centers in the projecting leg. Vitricel Sheets shall be held in place with suitable clips. All cracks and joints shall be filled and all metal clips shall be covered with Carey Vitricel or other suitable refractory cement.

Boiler Room Ceiling—Insulation shall consist of 2-in. thick 85% Magnesia Blocks, supported by approved sheet metal tee irons, suspended from the main ceiling. Firmly attach expanded metal lath to the tee iron members and make a finished ceiling with ½-in. thickness of Carey No. 100 Hard Finish Asbestos Cement, troweled smooth attached to ceiling.

Air Conditioning Ducts, Commercial — Cover all ducts with 1-in. thick CAREYCEL Boards firmly wired in place or attached with sheet metal screws. Seal all cracks and joints with 3-in. wide asbestos paper tape firmly pasted on. Where duct work is exposed, apply a layer of wool felt paper and over this 8-oz. canvas smoothly pasted on. Size and finish with two coats of lead and oil paint of color to be selected.

Warm Air Ducts—Residential—Cover with ½-in. thick CAREYCEL insulation applied and finished as specified for commercial installations.

Tanks, Heaters, Receivers, Traps, Etc.—Cover all such equipment with 85% Magnesia Blocks, firmly wired in place and finished with ½-in. thickness of Carey No. 100 Hard Finish Asbestos Cement, reenforced with hexagonal wire mesh, and troweled smooth. For temperatures under 250° F. use 1-in. thickness blocks; for temperatures above 250° F. use 1½-in. thickness blocks.

PIPING

CONDENSED INSULATION SPECIFICATIONS FOR POWER PLANTS, HEATING SYSTEMS AND PROCESS EQUIPMENT

HIGH TEMPERATURE PIPING INSULATION

Temperature	Recommended Carey Product	Pipe Sizes			
		½" to 1½" inc.	2" to 4½" inc.	5" to 8" inc.	9" and larger
700° F. to 850° F.	Inner Layer: Hi-Temp. No. 12 Outer Layer: 85% Magnesia	2" No outer layer	1¼" minimum 2"	1½" 2"	1½" 2½"
550° F. to 700° F.	Inner Layer: Hi-Temp. No. 12 Outer Layer: 85% Magnesia	2" No outer layer	1¼" minimum 1½"	1½" 1½"	1½" 2"

STEAM, HOT WATER AND LOW PRESSURE PIPING INSULATION

		½" to 3½" inc.	4" to 10" inc.	12" and larger
450° F. to 550° F.	Carey 85% Magnesia Carey Multi-Ply or Asbestos Sponge	2" 2"	Double Std. Thick 2½"	Double Std. 3" Thick 3"
350° F. to 450° F. (120-415 lb. pres.)	Carey 85% Magnesia Carey Multi-Ply or Asbestos Sponge	1½" 1½"	Double Std. Thick 2"	Double Std. 3" Thick 2½"
250° F. to 350° F. (30-120 lb. pres.)	Carey 85% Magnesia Carey Multi-Ply or Asbestos Sponge	Std. Thick 1"	1½" 1½"	2" 2"
150° F. to 250° F. (Hot Water & Low Pres.)	Carey 85% Magnesia Carey Careycel	Std. Thick 1"	Std. Thick 1"	1½" 1½"

COLD WATER AND MISCELLANEOUS PIPING INSULATION

Cold Water Piping (60° F. and over)	All pipe sizes—Perfecto (Wool Felt) Covering 1" thick To prevent freezing—Double 1" thick Protecto Covering
Ice Water Piping (40° F. to 55° F.)	50° F. and above—Double ½" thick Impervo Under 50° F. —Double ¾" thick Impervo
Roof Leaders, Down-Spouts, Soil and Waste Piping	All pipe sizes—Perfecto (Wool Felt) Covering 1" thick
Brine Piping	From 15° to 32° F., Brine thickness Cork or 2 layers, 1" thick Hair Felt alternated with waterproof paper. From 0° to 15° F., Brine thickness Cork or 3 layers, 1" thick Hair Felt alternated with waterproof paper. From 30° F. to 0° F., special thickness Brine Cork or 4 layers of 1" thick Hair Felt alternated with waterproof paper.

Application—All double layer coverings to have staggered joints, first layer being firmly wired or otherwise secured in place. External finish of covering to be standard pasted canvas jackets and metal bands on 18-in. centers. Canvas to be painted with one coat of cold water paint or sized and painted with two coats of lead and oil paint of color desired. Alternate finish may be 8 oz. canvas applied over building paper with Carey Metal Stitch or hand sewed three stitches per inch.

Fittings, Flanges and Valves

Hot Lines—Cover with 85% Magnesia Block and Asbestos Cement, or all Super 606 Cement, to the same thickness as adjacent pipe covering. Finish with canvas jacket, smoothly pasted on.

Cold and Ice Water Lines—Cover with Hair Felt and finish with a ½-in. thick coat of Carey No. 100 Hard Finish Asbestos Cement, troweled smooth. Total insulation thickness to be the same as that of adjacent pipe covering.

Outdoor Pipes and Equipment

Waterproof pipe insulation with 45-lb. per square asphalt roofing jackets, held in place with Carey Metal Stitch No. 2, jackets to have 2-in. laps in all directions. Waterproof valves, fittings, tanks, etc., with ¼-in. thick (dry) Thermotex Asphalt Emulsion applied in two layers, using wire mesh reenforced for large areas.

Underground Pipe Insulation

Insulate and waterproof all underground steam pipes with Carey System of Insulation for Underground Steam Pipes, strictly in accordance with manufacturer's specifications.

JOHNS-MANVILLE

EXECUTIVE OFFICES
22 East 40th Street, NEW YORK, N. Y.

Member of The Producers' Council, Inc.

Products

JOHNS-MANVILLE INSULATIONS.

For the following Johns-Manville products, see File Index: Acoustical Treatment and Sound Isolation; Asbestos and Asphalt Shingles; Built-up Roofs; Roof Insulation; Home Insulation; Insulating Board; Transite Walls; Tile Flooring; Transite, Flat and Corrugated; Asbestos Wainscoting and Flexboard; Steeltex for Plaster, Stucco and Brick or Stone Veneer; Steeltex Floor Lath and Welded Wire Reinforcement.

JOHNS-MANVILLE INSULATIONS

Because, for any specific service, there is one type and form of insulation that will serve better, more economically than any other, JOHNS-MANVILLE maintains a complete line of insulations.

From the four mineral products—asbestos, magnesium carbonate, diatomaceous silica (Celite), and rock or mineral wool—JOHNS-MANVILLE produces insulation in the forms of sectional pipe covering; insulating sheets, blocks, bricks and blankets; insulating cements, fillers and finishes; insulating papers and felts; as well as a lightweight aggregate used with portland cement for making insulating concrete. A wide range of hair felt products completes the line.

In the brief descriptions of heating, plumbing and refrigeration insulations, in the paragraphs following, the materials included are recommended for their recognized efficiency, desirability and economy for the various services covered.

In addition to these, JOHNS-MANVILLE also manufactures other materials for insulating homes and buildings, and for the insulation of every kind of high temperature industrial equipment.

Complete details of any type of insulation for any service will be promptly furnished upon application to the nearest JOHNS-MANVILLE office. The J-M Industrial Insulation catalog may also be obtained on request.

J-M 85% Magnesia Pipe Insulation and Blocks

JOHNS-MANVILLE recommends 85% Magnesia as the most generally satisfactory and economical material for insulating steam lines at temperatures up to 600° F.

For superheated steam at temperatures above 600° F., J-M 85% Magnesia is often used outside a layer of Superex.

J-M 85% Magnesia
Today it is the most widely used insulation for steam lines at temperatures up to 600° F.

J-M 85% Magnesia Pipe Insulation is furnished in 3-ft. sections and segments in the following thicknesses: Standard (which varies from ⅞ to 1½ in., depending on pipe size), 1½, 2, 2½ in.; Double Standard (two layers, each Standard thick); and 3 in. (double layer for broken joint construction).

J-M 85% Magnesia blocks are furnished in standard sizes 3x18 and 6x36 in., flat or curved, from ½ to 4 in. thick. Other sizes, and lagging, on special order.

In general, all pipes, fittings and flanges at temperatures below 600° F., except small fittings which are insulated with J-M No. 302 Cement, should be insulated with Asbesto-Sponge Felted or J-M 85% Magnesia to the thickness given in table below. Asbestos-Sponge Felted Pipe Insulation may be used at temperatures up to 700° F.

On outside piping it is customary to use insulation ½ in. thicker than that on indoor lines.

J-M PIPE INSULATION RECOMMENDATIONS FOR TEMPERATURES TO 600° F.
J-M 85% Magnesia or Asbesto-Sponge Felted

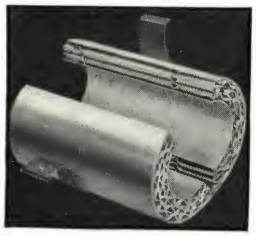
Thickness of insulation, J-M 85% Magnesia			Temperature, deg. F.	Thickness of insulation, Asbesto-Sponge Felted		
Pipes larger than 4 in.	Pipes 2 to 4 in.	Pipes smaller than 2 in.		Pipes larger than 4 in.	Pipes 2 to 4 in.	Pipes smaller than 2 in.
Std.	Std.	Std.	Below 212	1	1	1
Std.	Std.	Std.	212 to 266	1	1	1
1½	Std.	Std.	267 to 337	1½	1	1
2	1½	Std.	338 to 387	2	1½	1
Dbl. Std.	2	1½	388 to 499	2½	2	1½
3	Dbl. Std.	2	500 to 599	3	2½	2
			600 to 700	3½	3	2

J-M Asbesto-Sponge Felted Insulation

Asbesto-Sponge Felted is not only the most efficient commercial pipe insulation for temperatures up to 700° F., but it is also the most durable. It is practically abuse-proof, standing up indefinitely under vibration and wear and tear that quickly affect other materials.

Like J-M 85% Magnesia, it is often used outside a layer of Superex for insulating high temperature equipment.

Asbesto-Sponge Felted is furnished in 3-ft. sections in thicknesses from 1 to 3 in., also in sheets 24x36 in. and blocks 6x36 in. from ½ to 4 in. thick.



Pre-shrunk Asbestocel
With non-canvas finishes, saves one-third the labor cost

J-M Pre-Shrunk Asbestocel Pipe Insulation

For low pressure steam and hot water lines

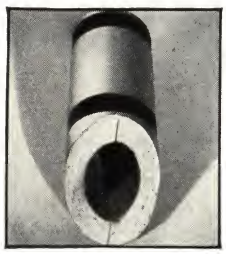
Pre-shrunk Asbestocel sectional pipe insulation is made of moisture-resisting asbestos felts to prevent objectionable shrinkage in service. Furnished in either aluminum finish, asbestos paper finish or with the usual canvas jacket. Thicknesses up to eight ¼-in. plies. For temperatures up to 300° F.

Asbestocel is also furnished in sheets and blocks, 4 plies to the inch, sizes 36x36, 18x36, 12x36 and 6x36 in. from ½ to 4 in. thick, and in flexible roll form 37 in. wide and ¼ in. thick.

J-M Pre-Shrunk Wool Felt Pipe Insulation

For service water lines

Made of specially indented wool felt and provided with a dual-service liner for use on hot or cold water lines. Treated to prevent objectionable shrinkage in service. Furnished with either aluminum finish or the usual canvas jacket. Thicknesses ½, ¾, 1, double ½, and double ¾ in. for pipe sizes from ½ and larger. For temperatures from 40° to 200° F.



Pre-shrunk Wool Felt
Furnished either with canvas or with an aluminum finish that requires no pasting and saves one-third on labor

J-M Rock Cork Sheets and Pipe Insulation

For low temperatures

Because Rock Cork has a successful service record extending for more than a quarter of a century, JOHNS-MANVILLE recommends it as an efficient and economical insulation for cold rooms, ducts and refrigerating equipment.

Made of rock wool combined with a waterproof binding ingredient, Rock Cork is mineral in composition; highly moisture-resistant; permanent; rotproof; chemically inert; odorless and incapable of absorbing odors. Completely sanitary, it will not harbor vermin or rats and cannot support the growth of mold or bacteria. With its tiny air spaces completely sealed with the waterproof binder, Rock Cork resists the infiltration of air and moisture, thus eliminating this direct cause of most insulation failures. No other low temperature insulation is as effective as Rock Cork in resistance to moisture absorption. More than any other one feature, this distinctive characteristic has been responsible for the outstanding service record of Rock Cork.

J-M Rock Cork is furnished in standard sheets, 18x36 in.; in thicknesses of 1½, 2, 2½, 3 and 4 in., and 18x18 in. in 1-in. thickness. Other sizes, within the above limitations and of standard thickness, can be furnished on special order.

Rock Cork in lagging form for curved surfaces is supplied 18 in. long, 1½, 2, 3 and 4 in. thick, and 2 to 5 in. wide, depending on diameter.

Rock Cork Pipe Insulation is moisture-proof

In Rock Cork Pipe Insulation, JOHNS-MANVILLE makes available an insulation for low temperature pipes that combines with the proved permanent high efficiency and unexcelled moisture-resistance of Rock Cork Sheets the added protection of *hermetic sealing*—a waterproof jacket, integral with the pipe covering and provided with a flap which is sealed down over the longitudinal joint at installation.

With similar treatment of the circumferential joint between sections, and the most effective method of insulating fittings, Rock Cork Pipe Covering provides an unbroken, seamless sheath of insulation, permanently airtight and moistureproof.

Fittings, the usual "weak spots" in low temperature pipe insulation, are insulated with Zerotex—a special waterproofed rock wool—and then double-sealed to provide an impenetrable barrier to moisture at these vulnerable points.

Other J-M Insulations

For high temperatures, the J-M line includes Superex pipe insulation and blocks for temperatures to 1900° F., Sil-O-Cel Natural Brick for temperatures to 1600° F. and JM-20 and Sil-O-Cel C-22 Brick for use up to 2000° F. The catalog "J-M Industrial Insulations" contains complete descriptions of the entire line. It is free on request.

J-M Rock Cork Sheets
Efficient, permanent and economical

THE RUBEROID CO.

Manufacturers of Ruberoid-Watson Insulating Products

EXECUTIVE OFFICES
500 Fifth Avenue, NEW YORK, N. Y.

DIVISIONAL OFFICES
NEW YORK CHICAGO BOSTON (MILLIS) ERIE BALTIMORE MOBILE

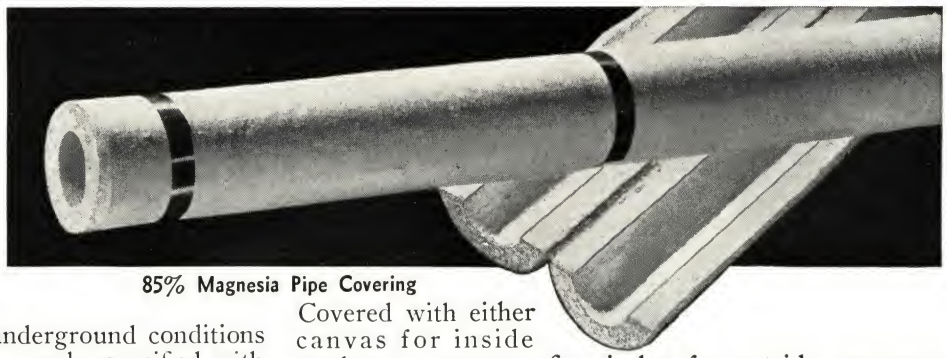
INSULATING PRODUCTS

85% Magnesia Pipe Coverings, Blocks, Sheets, Boiler Jackets, Insulating Cements, Rock Wool (Loose — Granulated—Bats), and General Asbestos Insulating Products.

For other Ruberoid Products, see File Index.

85% Magnesia for Medium and High Pressure Steam Lines

Ruberoid 85% Magnesia Insulating Products have grown in popularity because of their exceptionally high quality. Lightness in weight, exceptional insulation properties and sturdiness make this material a universal heat insulation for all temperatures up to 600° F.



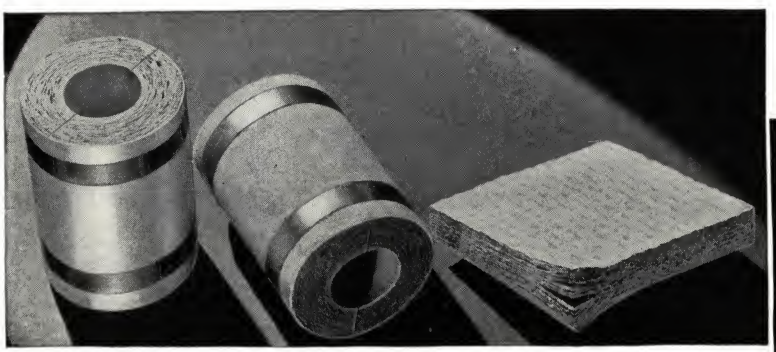
85% Magnesia Pipe Covering

Whether indoor, outdoor or underground conditions prevail, Ruberoid 85% Magnesia can be specified with the assurance it will accomplish the results expected.

85% Magnesia is universal in its use on all types of equipment. It can be moulded to fit all sizes of pipe. Covered with either canvas for inside work or a waterproofing jacket for outside exposure; it is furnished in flat or curved blocks; and for insulating irregular surfaces. Its insulation value is not impaired when it is applied in a plastic form.

SUPERCELL PIPE COVERINGS

For Low and Medium Pressure Steam Lines

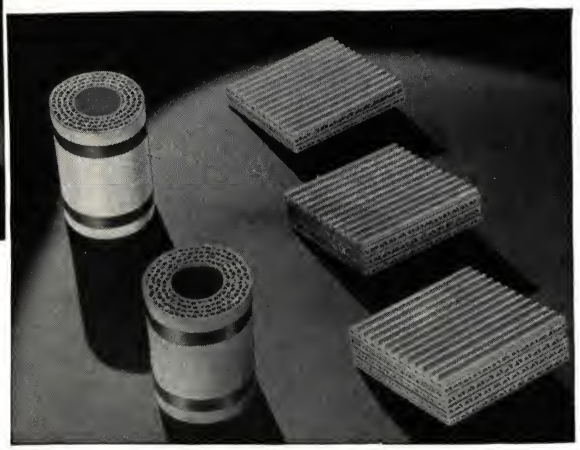


Supercell Pipe Covering

Check the distinct advantages of Supercell Pipe Insulation—tne newest development in the low and medium pressure field—temperature limit 350° F. It has 14 to 16 laminations of indented asbestos felt to the inch thickness. It is considerably lighter than old-fashioned pipe insulation, yet, due to its unique construction, provides as much as 35% higher efficiency. Can be obtained with the new pure white pyroxylin finish instead of canvas.

Air Cell

Made 2, 3 and 4 ply—each ply ¼ in. thick. Furnished in either the new pyroxylin finish or with canvas jacket. Temperature limits 350° F.



Air Cell Pipe Insulation

PLASTIC INSULATIONS

Ruberoid-Watson offers a complete line of scientifically prepared insulating cements that trowel well and stick to surfaces with the minimum of shrinkage, and afford the maximum insulation efficiency. The asbestos used is mined from the largest mines of asbestos in the United States.

Grade 203—Used for finishing and roughing coats. Coverage 27 sq. ft. per 1-in. thickness per 100 lbs. Temperature limit 1000° F.

Grade A—Second only to Grade 203. Contains slightly shorter fibres. Covers 20 sq. ft. per 1-in. thickness per 100 lbs. Temperature limit, 1000° F.

Grade 214—Particularly efficient to bind moulded insulations. Popular as a direct insulator over boilers, tanks, etc. 100 lbs. will cover 20 sq. ft. 1-in. thickness. Temperature limit, 1000° F.

Grade 115—A competitive cement. Covers approx. 19 sq. ft. 1-in. thick, per 100 lbs. Temperature limit, 1000° F.

Hard Finish—Made from long-fibred asbestos. A high quality protective finish coating over cement or insulating blocks. Hard glossy finish. May be painted. Temperature limit, 1500° F.

85% Magnesia Cement—Offers high efficiency up to 600° F. when applied direct to heated surfaces. Should be covered with ¼-in. coating of Hard Finish. Spreads 40 sq. ft. per 100 lbs. 1-in. thickness.

PIPE COVERINGS

For Hot and Cold Water Lines

Woolfelt Pipe Covering

Special surfacing process increases efficiency 20% to 30%. Weight also is reduced 20% to 30%. Made in three styles of liners: Asbestos Felt Paper for hot water lines; Waterproofed Tar for cold water lines; "Twin Purpose" for both hot and cold water lines.

Furnished in either the new pyroxylin finish or with canvas jacket.

Anti-Sweat Pipe Covering

Built of inner liner of asphalt-saturated asbestos paper, a half-inch of pure woolfelt, two layers of asphalt-saturated Asbestos felt, another half-inch of pure woolfelt, with two outer layers of asphalt-saturated asbestos felts. Outer layer has flap extending beyond the joint at least 3 in. 1-in. thickness and greater made in telescopic construction — sections are 3 ft. in length.

Anti-Sweat Pipe Covering

Frost-Proof Pipe Covering

Succeeding layers of cattle hair felt and pure woolfelt—with liner of asphalt-saturated woolfelt—tightly wrapped, provides an ingenious, highly efficient, freeze-proof covering for cold water lines, drain pipes, etc. For unusually severe conditions obtainable also in telescopic construction or a built-up hair felt insulation. Canvas jacketed. Special weatherproof jacket for outdoor use, extra.

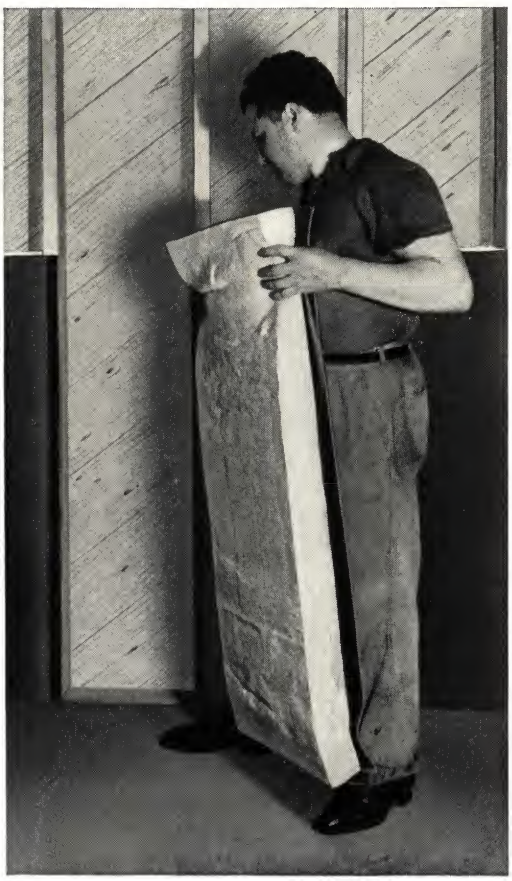
RU-BER-OID ROCK WOOL

Loose—Bats—Granulated

This indestructible wool is one of today's most efficient insulating materials. It is absolutely fireproof, verminproof and inert toward moisture. It affords excellent sound-deadening and acoustical qualities. It may be expected to save 20% to 35% in fuel bills in winter and make the interior of a house 10 to 15 degrees cooler in summer.

Loose Rock Wool is recommended for use under the attic floor or top floor ceiling. It should be packed to a density of 8 lbs. per cu. ft. and not less than 4-in. thickness to obtain best results. Coverage approximately 21 sq. ft. per bag weighing 35 lbs.

Because of their great size and waterproof backing, RU-BER-OID Giant Kraflined Rock Wool Bats are most popular for use between studs in sidewalls or between roof rafters. These bats are 48 in. long so that only two are required to reach the ceiling of an average room. The waterproof backing of these bats consists of a heavy paper cover impregnated with asphalt. This backing is a protective barrier to moisture penetration. Giant Kraflined Bats are 15 x 48 in. x wall thickness. Packages contain five bats or 25 sq. ft. per carton. Standard Kraflined Bats are 15 x 23 in. x wall thickness. Packages contain eight bats or 19.2 sq. ft. per carton.



Ruberoid also manufactures Wall-Fil Pads for use between studs. These are 9 x 15 in. x wall thickness, each carton containing 20 pads covering 18.75 sq. ft. Less expensive than bats.

Granulated Rock Wool, about the size of a pea or marble, is recommended for pouring or mechanical blowing. When applied to a service insulation density of about 8 lbs. per cu. ft. and thickness of 4 in. it gives a coverage of about 16 sq. ft. per bag. Weight 30 lbs. per bag.

KEASBEY & MATTISON COMPANY

AMBLER, PA.

DISTRICT OFFICES IN PRINCIPAL CITIES

For K&M Asbestos Roofing and Siding Shingles, Mineral Wool, Sidewall and Ceiling Erection System, Trafford Tile, Asbestos Corrugated, Decorative Wallboards, see File Index

PIPE INSULATIONS

"Featherweight" 85% Magnesia

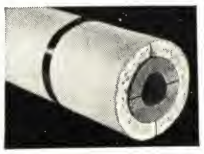
K&M "Featherweight" 85% Magnesia Pipe Insulations—This type of insulation, originated by the KEASBEY & MATTISON COMPANY, has the high insulating properties of basic carbonate of magnesia which material, combined with the proper amount of clean asbestos fibre as a binding element, produces a material absolutely fireproof, strong mechanically, exceptionally light in weight and highly efficient as an insulating material.

"Featherweight" 85% Magnesia Pipe Insulation is made in sections and segments 3 ft. long and in thicknesses as follows: *Standard:* 1½ in., 2 in. *Double Standard:* (Broken Joint) and 3 in. thickness (Broken Joint).

K&M "Hy-Temp" Pipe Insulation—Will maintain high efficiency where temperatures run from 600° to 1900° F. Hy-Temp is a combination of high heat resisting materials and asbestos fibre, which materials when bonded together produce an insulation of low thermal conductivity and relatively light weight—(about 24 lbs. per cu. ft.).

Hy-Temp Pipe Insulation is made in sections and segments, 3 ft. in length and in the same moulded shapes as "Featherweight" 85% Magnesia Insulation.

"Hy-Temp" Combination Pipe Insulation—This consists of an inner layer of Hy-Temp Insulation and an outer layer of "Featherweight" 85% Magnesia Insulation. This construction combines the great insulation efficiency of "Featherweight" 85% Magnesia with the high heat resistance of Hy-Temp Insulation.



"Hy-Temp" Combination

Lamino Spongefelt

Lamino Sponge Felt Pipe Insulation—A laminated insulation composed of asbestos fibre and particles of finely ground sponge, which materials form a cellular felt that is built up, having about forty laminations per inch of thickness.

It is tough and flexible. Recommended where temperatures range up to 700° F.

K&M Air Cell Pipe Insulation—This pipe insulation is an approved air cell insulation, made from corrugated asbestos felt, alternated with a layer of plain asbestos felt, firmly bonded together. Each layer is approximately ¼ in. thick. The absence of vegetable binders makes K&M Air Cell Pipe Insulation vermin-proof.

Standard sizes are ½, ¾ and 1 in. in thickness, sections being 3 ft. long. Greater thicknesses can be furnished.

WOOLFELT PIPE INSULATION

Duplex Woolfelt

Duplex Woolfelt Pipe Insulation—A woolfelt insulation designed to give satisfactory service on either cold or hot water service lines. A special impregnated inner lining assures maximum service for these purposes.

Cold Water Pipe Insulation—This insulation is made of successive layers of woolfelt with an inner lining of water-proof felt. Its purpose is for use on cold water service lines.

Hot Water Pipe Insulation—This insulation is made of successive layers of woolfelt with an inner lining of asbestos paper. Its use is primarily for hot water service lines.

Non-Sweat Pipe Insulation—An insulation made in single and double layer construction composed of a combination of insulating and waterproofing felt. Single layer is made in thicknesses of ½ and ¾ in. Double layer (Broken Joint) is made in thicknesses 1, 1½, and 2 in. The double layer, or Broken Joint, construction eliminates the longitudinal and the abutting joints.

Non-Sweat Pipe Insulation is a superior covering for use on cold water lines.

Non-Frost Pipe Insulation—This insulation is constructed of layers of hairfelt, surrounded by several layers of woolfelt and a layer of treated woolfelt inside the hairfelt to prevent the hair coming in contact with the pipe surface. For use on cold water pipes that are exposed to moderately low temperatures.

Non-Frost Pipe Insulation is furnished in 3-ft. lengths, with canvas jacket and brass lacquered bands. It is made in all pipe sizes from ½ in. up, and in one thickness—about 1¼ in.

SHEET AND BLOCK INSULATIONS

K&M "Featherweight" 85% Magnesia Block Insulation—This material is composed of carbonate of magnesia and asbestos fibre manufactured in exactly the same manner as 85% "Featherweight" Magnesia Pipe Insulation. Block Insulation is moulded and machined into proper form.

It is designed particularly for use on flat, curved and irregular surfaces of boilers, breachings, walls, stills and tanks.

K&M "Hy-Temp" Block Insulation—Hy-Temp Block Insulation is manufactured from the same combination of materials as Hy-Temp Pipe Insulation and carries the same essential qualities of heat resistance, together with mechanical strength and durability.

The blocks are furnished in standard sizes 3", 6", 9" and 12" wide x 36" long, flat and curved, in thicknesses ½ to 4 in. Weight is approximately 2 lbs. per sq. ft., per 1 in. of thickness.

K&M best in asbestos

"Hy-Temp" Combination Block Insulation—This combination of insulation is an inner layer of Hy-Temp Blocks and an outer layer of "Featherweight" 85% Magnesia Block. The thickness of the Hy-Temp Block necessary to give maximum efficiency is determined on the basis of the maximum temperature on the inner surface of the Hy-Temp and affords protection to the "Featherweight" 85% Magnesia outer layer of insulation which is high in insulation value, but lower in heat resistance than Hy-Temp Insulation.

Lamino Sponge Felt Sheet and Block Insulation—This block insulation is recommended where surface temperatures do not exceed 700° F. It is fabricated and not a moulded insulation. Its initial efficiency is often higher than 85% Magnesia Insulation.

Lamino Sponge Felt Block can be used as an outer layer in combination with Hy-Temp block, which combination permits its use for much higher operating temperatures than 700° F.

UNITED STATES GYPSUM COMPANY

National Asbestos Division

300 W. Adams St., CHICAGO, ILL. 30 Rockefeller Plaza, NEW YORK, N. Y.

SEE FILE INDEX FOR OTHER USG CATALOGS CONTAINING LIST OF SALES OFFICES

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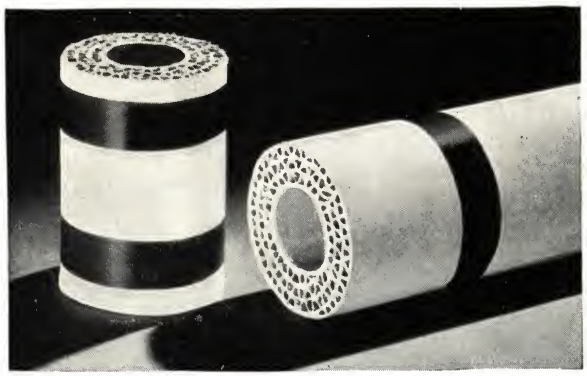
JACKETLESS ASBESTOS PIPE COVERING
For Steam and Hot Water Insulation



A well made, sturdy insulation for low pressure steam and hot water pipes that costs no more than canvas jacketed covering and can be applied in two-thirds less time. It has a clean, white smooth appearance, is shrinkproof and crackproof. Its finish is washable.

This round, air cell insulation is clean and easy to handle. There is no paste to be prepared and applied to canvas flaps. You simply open the sections, put them on the pipe, insert the staple, and apply the bands. An advancement in pipe covering manufacture that provides greater efficiency and economy and a much neater appearance.

RANGE BOILER JACKET
Easy to Apply—Saves Fuel

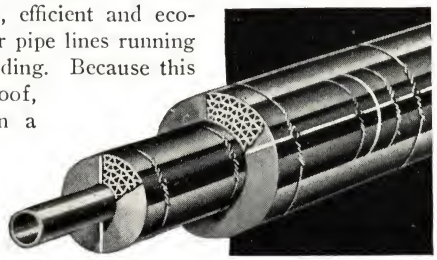
National Range Boiler Jacket, made of 3-ply white flexible quarter-inch corrugated asbestos paper, is furnished in two sections, one for upper part of tank and one for lower part, with five bands.

The two sections are wrapped around the tank and the shiny black metal bands put into place. Plaster Asbestos, which comes with each jacket, is then spread over the top.

Water in the tank heats more quickly with less fuel, and remains hot much longer. The jacket provides a saving in fuel cost of from 40% to 60%.

* Trade-Mark

PYRO-BESTOS* PIPE COVERING
Waterproof Pipe and Stack Insulation



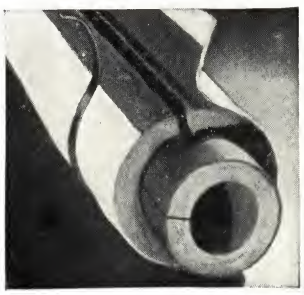
A strong, practical, efficient and economical insulation for pipe lines running from building to building. Because this insulation is waterproof, it may be buried in a trench, or tunnel, or exposed to the weather and still retain its insulating value.

NEVER-FREEZE PIPE COVERING
For Cold Water and Drainage Piping

National Never-Freeze Pipe Covering is made in three-foot sections 1¼ in. thick and is used to prevent cold water and drain pipes from freezing in unheated rooms.

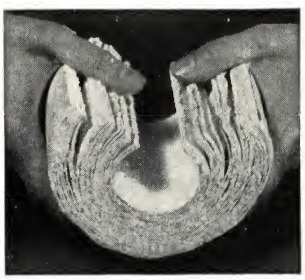
It is made of alternate layers of pure cattle hair felt and wool felt paper, with a saturated asbestos felt liner and canvas jacket.

ANTI-SWEAT PIPE COVERING
For Cold Water Supply Piping



National Anti-Sweat Pipe Covering is made of creped wool felt paper, having five waterproof asphalt impregnated asbestos paper liners. It is made in two sections, one inside the other, breaking joints longitudinally and transversely. A three-inch lap seals longitudinal cut. Generally used on lines carrying liquid from 32° to 50° F.

LAMINATED ASBESTOS-SPONGE INSULATION
A High Pressure Insulation



Laminated Asbestos and Sponge Insulation is constructed of special asbestos paper impregnated with finely ground sponge. It is built up like a book in laminated form and provides practically indestructible insulation. It not only will withstand severe pipe vibration and rough usage but it will retain its original high efficiency when wet.

BAR-RAY PRODUCTS, INC.

X-Ray Building Specialties

TELEPHONE
SOuth 8-5225

209 Twenty-fifth Street, BROOKLYN, N. Y.

AGENTS IN
PRINCIPAL CITIES

Products and Service

LEAD INSULATED PARTITION BLOCKS; LEAD INSULATED LATH; LEAD INSULATED WAINSCOT; LEAD INSULATED DOORS; LEAD COVERED NAILS; PREPARED BARIUM PLASTER; OPERATORS WINDOW FRAMES OF LEAD; X-RAY RESISTING GLASS; X-RAY RESISTING PAINT; LEAD INSULATED FILM TRANSFER CABINETS.

X-Ray protection is our exclusive business in which our experts are recognized authorities. We offer the services of our staff in the solution of any problem of X-ray protection.

General Description of Bar-Ray Products

We have a material and method to meet the requirements of the U. S. Bureau of Standards wherever X-Ray equipment or radium is used.

Bar-Ray Shades and Frames are used wherever it is necessary to exclude *all* light.

Bar-Ray Ventilators provide for maximum ventilation while preventing penetration of light.

Also other Special Devices used to bar X-rays and light rays.

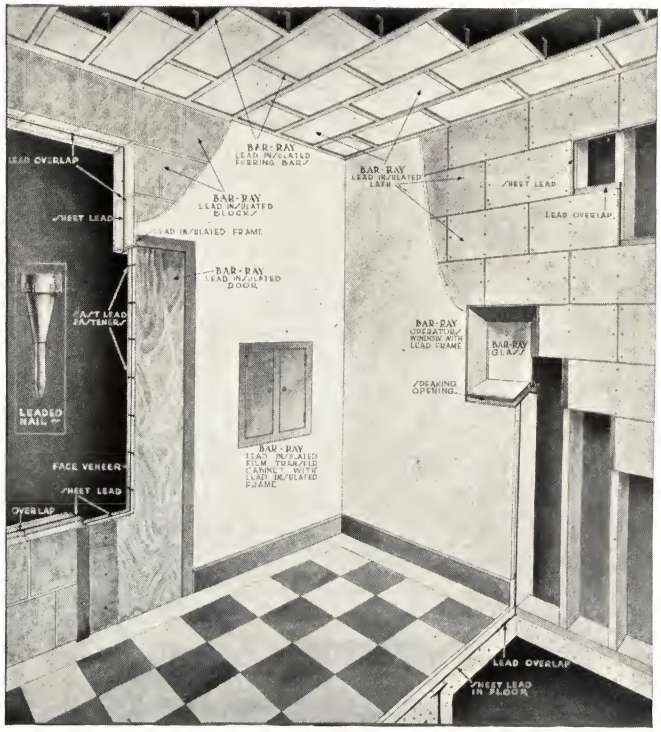
SPECIFICATIONS FOR BAR-RAY PRODUCTS

Important Note

When specifying X-ray protective building materials, we advise that the name BAR-RAY PRODUCTS, INC., *be specifically mentioned. Thus you will be assured of the high standard of quality and the complete protection Bar-Ray materials afford.*

Bar-Ray Lead Insulated Partition Blocks

Walls indicated on plan to be lead insulated shall be built of cinder concrete blocks having an unpierced sheet of lead through center .... in. thick. Blocks shall be 4x12x12 in. with sufficient number of half blocks for proper bonding of wall. Whole blocks shall weigh not more than 24 lbs. with $\frac{1}{16}$-in. lead, nor more than 29 lbs. with $\frac{1}{8}$-in. lead. Lead shall be exposed not less than 1½ in. on all four bearing sides to allow for lapping of lead on all adjoining blocks. *Anchors for holding cinder concrete to lead shall be cemented on.* Burning or soldering will not be permitted. Blocks shall be manufactured so that all or part of concrete on either side of lead can be removed to provide for mechanical lines without damaging sheet lead.



Lead Insulated Lath

Walls indicated on plan to be lead insulated shall be covered with plaster board lath 12x32 in. backed with unpierced sheet lead .... in. thick. Lead shall extend beyond edge of plaster board 1 in. top and one side for lapping lead on all adjoining sheets. Lead lath shall be applied to (studs) (furring strips) using special lead covered nails.

Lead Insulated Doors

Doors indicated on plan to be lead insulated, shall be flush type of size, thickness and finish as noted, and to have a continuous sheet of lead through center .... in. thick. Cores with lead positioned between shall be held together with poured lead fasteners. Use of metal other than lead will not be permitted in the manufacture of these doors. Doors to have glass panels shall be cut at factory so that glass will properly lap and come in contact with lead; glass mouldings shall be provided. Doors will be as manufactured by BAR-RAY PRODUCTS, INC., of Brooklyn, N. Y., or equal approved in writing by the architect.

Lead Insulated Wainscot

Lead insulated wainscot, pilasters and lead covered nails shall be as manufactured by BAR-RAY PRODUCTS, INC., of Brooklyn, N. Y., or equal approved in writing by the architect.

Operators Window Frames of Lead

Operators window frames indicated on plan are to be made entirely of lead in one piece, and are to have a horizontal opening at bottom for voice transmission. They shall be splayed top, bottom and both sides to allow for a wide range of vision. Glass size to be 12x16 in. Frames are to be manufactured so that lead comes in contact with and laps glass $\frac{3}{8}$ in. at all points. They shall be delivered to the job complete with glass mouldings of lead. Operators window frames shall be as manufactured by BAR-RAY PRODUCTS, INC., of Brooklyn, N. Y., or equal approved in writing by the architect.

Ventilators

Bar-Ray Ventilators 24 in. wide by 12x1$\frac{3}{8}$ in. shall be used where indicated on plan to prevent penetration of light. Where they are used in doors or walls having lead insulation, they shall be manufactured entirely of lead.

Shades and Frames

Bar-Ray Shades and (Wood) (Metal) Frames shall be applied to all windows where so indicated on plan. Shades shall be artificial leather reinforced with non-rusting rods at proper intervals and mounted on metal roller with extra strong spring.

Frames shall have shade housing at top with removable cover for access to shades. They shall be delivered to the job complete with priming coat of paint.

X-Ray Resisting Paint

Bar-Ray Paint to be used on all painted surfaces in X-ray department.

Lead Insulated Film Transfer Cabinets

Where indicated on plan, film transfer cabinets will be installed complete. They shall have two compartments and be furnished complete with frames, doors and automatic locking devices.

X-Ray Resisting Glass

It shall provide protection equivalent to thickness of lead in doors and walls where it is to be used.

Prepared Barium Plaster

Prepared barium plaster shall be as manufactured by BAR-RAY PRODUCTS, INC., of Brooklyn, N. Y., or equal approved in writing by the architect.

Recent Installations

ALASKA—Soldiers and Sailors Home. CALIF.—*Los Angeles,* General Hospital; *Oakland,* Highland Hospital; *Sunnyvale,* U. S. Naval Air Station. CAN.—*Montreal,* Jewish Hospital, Montreal General Hospital; *Quebec,* Macdonald College. CONN.—*Torrington,* Charlotte Hungerford Hospital. FLORIDA—*Jacksonville,* Brewster Hospital; *Lake City,* Veterans' Administration and Clinic Hospital; *Lakeland*—Veterans' Administration Hospital. HONOLULU—Honolulu Hospital. MARYLAND—*Baltimore,* City Hospital; *Milford,* General Hospital. MASS.—*Quincy,* City Hospital, *Boston*—Boston State Hospital; *Fall River,* Fall River General Hospital. MICH.—*Iona,* State Hospital; *Detroit,* Polyclinic Hospital, Mo.—*Springfield,* U. S. Hospital for Defective Delinquents; *St. Louis,* St. Joseph's Hospital. NEW JERSEY—*New Brunswick,* Middlesex General Hospital; *Paterson,* Valley View Sanitarium. NEW YORK—*Attica,* State Prison; *Lowville,* Lewis County Hospital; *Walkill,* Medium Security Prison; *New York City,* Bellevue Hospital Pavs. C&D, Cornell Medical Center, Harlem River Houses, Memorial Hospital, Welfare Island Hospital for Chronic Diseases; *Astoria,* Health Center; *Brooklyn,* Long Island College Hospital; *Oneida,* City Hospital; N. C.—*Black Mt.,* Western N. C. Sanatorium; *Sanford,* Lee County Hospital. PENN.—*Bethlehem,* St. Luke's Hospital; *Lewisburg,* U. S. Northeastern Penitentiary. TENN.—*Nashville,* Nashville General Hospital. WIS.—*Winnebago,* Sunnyview Sanitarium.

Architects Who Have Specified Bar-Ray Products

COLORADO—*Denver,* T. H. Buell. DELAWARE—*Wilmington,* Brown & Whiteside. ILLINOIS—*Chicago,* J. Herrick Hammond. MARYLAND—*Baltimore,* Palmer & Lamdin; MASSACHUSETTS—*Boston,* Coolidge, Shepley, Bulfinch & Abbott, Kendall-Taylor, Stevens & Lee. MICHIGAN—*Detroit,* Smith, Hinchman & Grylls; GRAND RAPIDS, Colton, Knecht, McCarty & Thebaud. NEW JERSEY—*New Brunswick,* Alex Merchant. NEW YORK—*Albany,* William E. Haugaard; *Brooklyn,* David McElroy; *New York,* Alfred Hopkins & Assoc., A. Manning Brown, Butler & Kohn, C. B. Meyers, Clay & Corrigill, Crow, Lewis & Wick, J. Lustig, McKim, Mead & White, Sloan & Robertson, Starrett & Van Vleck, York & Sawyer; *Syracuse,* M. L. & H. A. King. NORTH CAROLINA—*Raleigh,* Wm. H. Deitrick. OHIO—*Lima*—T. D. McLaughlin & Assoc. PENNSYLVANIA—*Bethlehem,* Lovelace & Spillman. TENNESSEE—*Nashville,* Asmus & Clark. WASHINGTON, D. C., U. S. Navy Dept. WISCONSIN—*Oshkosh,* Auler, Jensen & Brown.

RAY PROOF CORPORATION

MANUFACTURERS AND CONTRACTORS

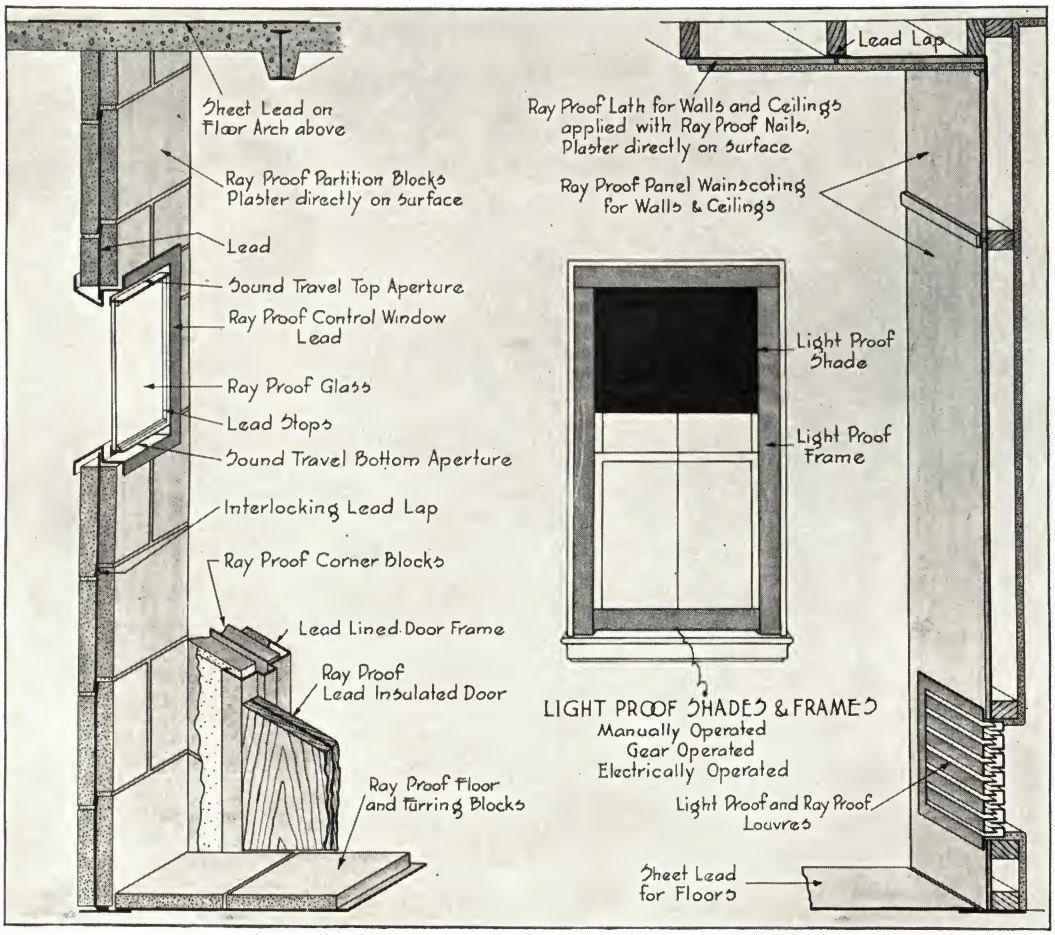
TELEPHONE
Mohawk 4-2610

X-Ray Proofing and Light Proofing Materials
Design, Layouts, Construction, Installations

420 Lexington Avenue, NEW YORK, N. Y.
OFFICES IN PRINCIPAL CITIES

RAY PROOF MATERIALS AND METHODS

X-Ray Protection TRADE MARK RAY PROOF REG. U.S. PAT. OFF. *Light Proof Shades*



Architects Who Have Specified Ray Proof Materials

Grosvenor Atterbury, New York
J. Evans Sperry, Baltimore
*Crow, Lewis & Wick, New York
Sutton & Sutton, Newark
Lafaye & Lafaye
Hoffman - Henon, Philadelphia
*M. H. Goldstein, New Orleans
Schenck & Williams
Sloan & Robertson, New York
*Ebbets & Frid, Hartford
LeRoy P. Ward, New York
*Cudworth & Thompson, Norwich
*Kendall, Taylor & Co., Boston
Henry C. Pelton, New York
J. Russell Pope, New York
Waid & Corbett, New York
F. J. & W. A. Kidd, Buffalo
Paul C. Reilly, New York
Zantzinger, Borie & Medary, Philadelphia
Frost, Chamberlin & Edwards, Worcester
William S. Gregory, New York
*C. B. Meyers, New York
Eric Flanagan
Horace Trumbauer, Philadelphia
Cass Gilbert, New York
Stevens & Lee, Boston
William C. Haugaard, New York State
Coolidge, Shepley, Bullfinch & Abbott
Maul & Lentz, Detroit
Schmidt, Garden & Erickson, Chicago
T. D. McLaughlin & Assoc., Boston
Ritchie & Assoc., Boston
George E. Robinson, Boston
Tudor R. Williams, Scranton
Ritter & Shay, Philadelphia
York & Sawyer, New York

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Holmdel State Hospital, N. J.
Hartford Municipal Hospital, Conn.
Evangelical Deaconness Hospital, Brooklyn, N. Y.
Wills Hospital, Philadelphia, Pa.
Laurel Heights Hospital, Conn.
Good Samaritan Hospital, Ohio
Zurbrugg Memorial Hospital, N. J.
Lincoln Hospital, N. Y.
Brooklyn State Hospital, N. Y.
Flint Goodridge Hospital, New Orleans, La.
Windham Community Hospital, Conn.
Lima City Hospital, Ohio
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Fitzgerald Mercy Hospital, Philadelphia, Pa.
Meadowbrook Hospital, N. Y.
Crownsville State Hospital
Metropolitan Life Insurance Co., N. Y.
Boston City Hospital
Cornell Medical Clinic, N. Y.
Scranton Junior High School, Pa.
Norristown State Hospital, N. J.
Lonergan School, Philadelphia, Pa.
Indian Sanatorium, Albuquerque, N. M.
Union County Court House, N. J.
Harrisburg State Hospital, Pa.
University of Maryland Hospital, Md.
Children's Tuberculosis Sanatorium, Buena Vista, Md.
Boston State Hospital, Mass.
Skin and Cancer Hospital, Philadelphia, Pa.
Seaside Hospital, Conn.
Rockefeller Center, Radio City, New York, N. Y.
Montrose Grade School, N. Y.
Great Meadow Prison, N. Y.
Randolph Hospital, Asheboro, N. C.
Women's Hospital, Philadelphia, Pa.
Malden Hospital, Mass.
Polyclinic Hospital, N. Y.
Essex County Hospital, N. J.
Psychopathic Hospital, N. Y.
Lee County Hospital, N. C.
Cedarcrest Sanatorium, Conn.
Orange Memorial Hospital, N. J.
Wyandotte General Hospital
Bloomingdale Hospital, N. Y.
U. S. Marine Hospital, Evansville, Ind.
Grasslands Hospital, N. Y.
Philadelphia General Hospital, Pa.
Western State Hospital
Littleton Hospital, N. H.
U. S. Naval Hospital, Newport, R. I.
Lakehurst Naval Air Station, N. J.
Jeremiah E. Burke High School, Boston, Mass.
Henrotin Hospital, Chicago, Ill.
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Experienced staff of engineers and designers is available for consultation on any type of project to assist in selection of most serviceable or suitable tile products, specificational subjects or design details. This staff is prepared to study any set of unusual conditions and make definite recommendations in meeting the architect's requirements.

The infinite variety of products in a multiplicity of sizes, patterns, colors and designs, makes it desirable for architects to request the publications described below for their reference library and thus obtain complete details.

PUBLICATIONS FOR ARCHITECTS

BOOKLET NO. 100—TILE SPECIFICATIONS FOR HOUSE CONSTRUCTION

Specifically prepared to simplify selection and specification of types, sizes, colors. Contains seven complete sets of specifications for the tilework in *seven price groups* of houses ranging in total cost from $3,500 to $20,000 and above. Selective provisions are presented separately from general provisions. The recommendations for tiling have been held proportionate to cost of houses in each group. Adequate choice in color combinations has been provided by illustrations in full color.

90 Pages

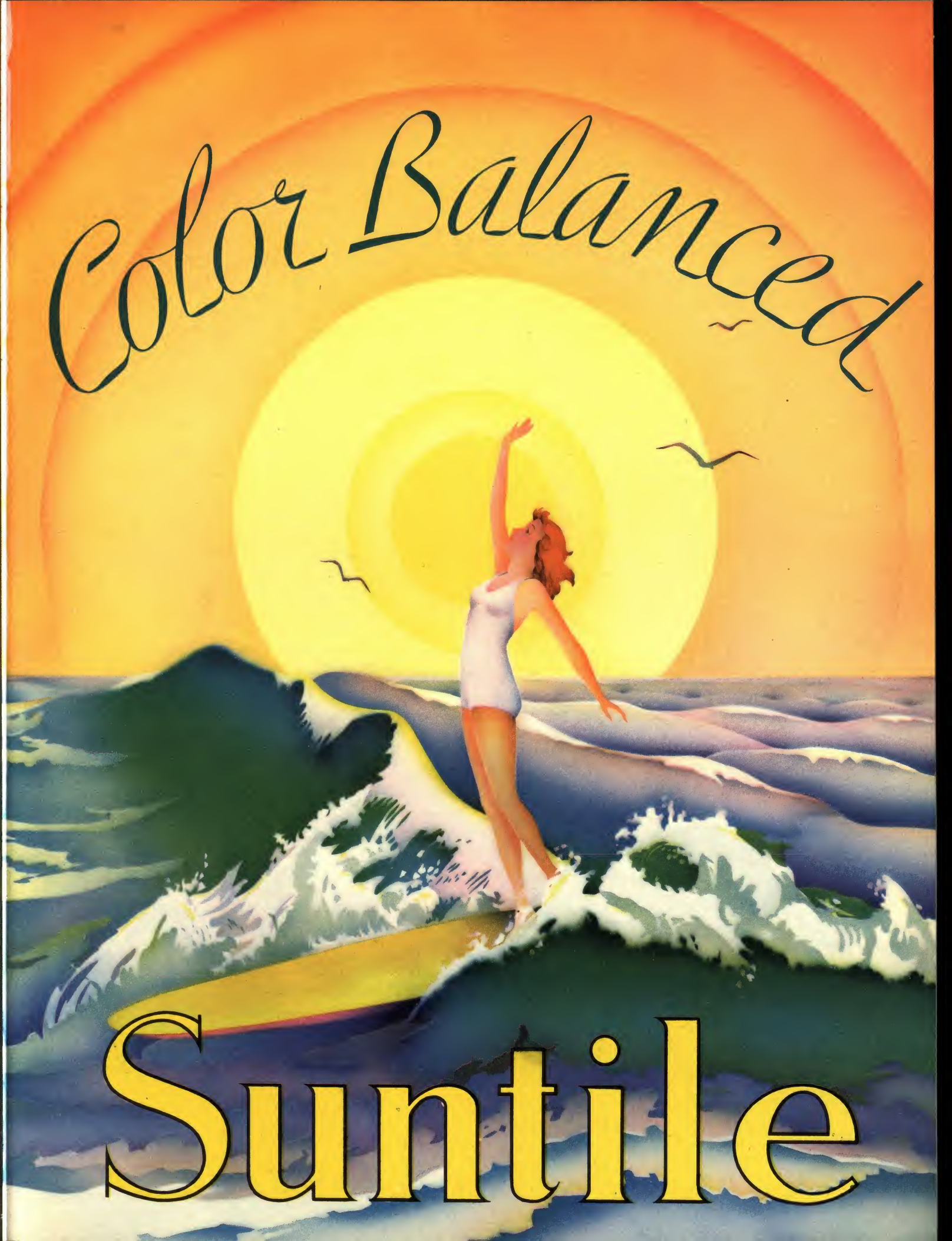
CATALOG NO. 20 SHAPES, SIZES, COLORS, ACCESSORIES

Tile Handbook for your organization which describes, defines and classifies all types of glazed and unglazed tiles, decorative units and related tile products, with information on suitability for different types of installations. Gives full detail on trade sizes, thickness, body density, finishes, grades, joints, edges, glaze characteristics, processes, tests, trim shapes, designs, motifs, patterns, mantels, fireplaces, structural items, color charts and color schemes for interior installations, etc.

140 Pages

Gladly furnished to architects upon request.

MEMORANDA


Color Balanced
Suntile

Suggestions for Simplified Specifications

INTRODUCTORY:

The term "Suntile" is the trade name of all the genuine clay tiles manufactured by The Cambridge Tile Manufacturing Company, and distributed through selected tile contractors only.

GENERAL CLASSIFICATION:

The various kinds of Suntile are herein classified by name into four fundamental body types. The body type factor together with the factor of surface finish determines the functional limitations of Suntile. All other factors pertain only to appearance—not function.

(1) FACTORS AFFECTING FUNCTION

(a) Body Type

NOTE: Ordinarily the density and strength of the body increase with decreasing absorption.

Non-vitreous —absorption 7% and over
Semi-vitreous —absorption 3% to 7%
Vitreous —absorption .5% to 3%
Impervious —absorption 0% to .5%

(b) Surface Finish

Glazed—Having on the surface a bonded impervious glassy layer different in composition from the tile body. A glaze may be matt (having little or no reflective qualities) or brite (having high reflective qualities). Brite glazes are not recommended for floors.

Unglazed — Homogeneous throughout — without any glaze layer. NON-SLIP surface is obtained by adding abrasive grains in the tile body (additional charge).

(2) FACTORS AFFECTING APPEARANCE

(a) Quality

Standard quality should be specified and the tile contractor required to obtain and deliver with every job a certificate of quality from the tile manufacturer.

"Seconds" are imperfect tiles, unsuitable for first-quality installations.

(b) Manufacturing Processes

Dust Pressed—Made by application of high pressures to moist, refined clay dust.
Plastic—Faience or Quarry. Made by extrusion or other forming methods from plastic clay mud.

NOTE: Any of the four body types can be made by either process but neither method of manufacture determines the functional quality of the finished product.

(c) Color

White, black and many colors are available in both glazed and unglazed tiles. Body color does not determine the functional quality of a tile but does affect the appearance of glazes applied.

(d) Size, Pattern or Design

Sizes, shapes and patterns are manifold. They can be combined for any design effect.

12"x6" are new units. They are being used extensively for modern treatments.

Functional Chart of Tile Body Types

The functions outlined below have not been established from absorption or any other single factor but from results of many tests for modulus of rupture, autoclave, freezing, thermal shock, acid resistance, glaze fit, etc.

TYPES OF TILE BODIES	Suntile Products and Trade Names	FUNCTIONS ON WALLS	FUNCTIONS ON FLOORS	AVERAGE PERCENT OF BODY ABSORPTION
NON-VITREOUS *Glazed*	Wall Tile, Coradon Tile	Light duty — ordinary wainscots, interiors only.	Unsuitable—DO NOT USE.	7% and over
NON-VITREOUS *Unglazed*		Light duty—for special effects; surface treatment required after installation.		7% and over
SEMI-VITREOUS *Glazed*	Camprest, Camettes, Coradon	Medium duty interiors—sinks, public bldgs., exposed corners subject to knocks from service apparatus. Exteriors in moderate climates.	Light duty for light traffic only — private residence baths, sun parlors, etc.; interior or exterior, in moderate climates.	3% to 7%
SEMI-VITREOUS *Unglazed*		Medium duty—for special effects; surface treatment recommended after installation.		3% to 7%
VITREOUS *Glazed*	Impervatile, Glazed Ceramics	Heavy duty—vehicular tunnels, subway stations, vat linings, etc. Exteriors in any climate.	Medium duty not subject to heavy traffic—private residence vestibules or kitchens; semi-public bldgs. Interiors or exteriors.	.5% to 3%
VITREOUS *Unglazed*	Ceramic Mosaic (Red, black, chocolate, salmon), Multichrome Ceramics, Floor Tile, Pavers (black), Multichrome Pavers, Pyroflash	Heavy duty—interior or exterior. Not as easily cleaned as impervious.		.5% to 3%
IMPERVIOUS *Glazed*	Glazed Ceramics	Heavy duty — glazed ceramics only.	Medium duty — glazed ceramics only.	0 to .5%
IMPERVIOUS *Unglazed*	Ceramic Mosaic (All colors except red, black, chocolate and salmon), Floor Tile, Pavers (White, light gray stipple, blue stipple, green stipple)	Heavy duty—interior or exterior.		0 to .5%

Commonly Used Terms and What They Mean

Wall Tile — Usually implies the glazed, non-vitreous type.

Ceramic Mosaic—Usually implies the unglazed vitreous or impervious types made in 1/4" thickness and limited to $2\frac{3}{16}$" for the longest dimension of their area, and usually mounted on paper.

Floor Tile—Usually implies the unglazed vitreous or impervious type in sizes larger and thicker than ceramic mosaics, unmounted.

Faience—Implies the plastic process of manufacture. It may be glazed or unglazed in any of the four body types; usually in the glazed semi-vitreous type.

Quarry Tile—Implies a plastic process tile, mechanically formed, from natural colored clays; usually in the unglazed vitreous type.

Suntile Products Their Names . . . What They Are

Camettes — Small, glazed semi-vitreous type; mounted.

Camprest — Glazed, semi-vitreous type; unmounted.

Coradon—12"x6" glazed, non-vitreous type; unmounted.

Faience—Glazed, semi-vitreous type; unmounted.

Multichrome Faience—Unglazed, semi-vitreous natural clay type; unmounted.

Multichrome Ceramics — Unglazed, vitreous natural clay type; mounted.

Pavers—Unglazed, impervious porcelain type; unmounted.

Multichrome Pavers — Unglazed, semi-vitreous natural clay type; unmounted.

Impervatile—Glazed, vitreous type; unmounted.

Pyroflash—Unglazed, vitreous, natural clay type; color flashed-in by firing; mounted.

Six Factors to Be Covered When Specifying

Check One Item in Each Column

QUALITY	SURFACE FINISH	TYPE OF BODY	PROCESS OF MANUFACTURE	COLOR	DESIGN AND SIZE
Standards	Glazed	Non-Vitreous	Dust Pressed	As Selected	As Selected
		Semi-Vitreous	Plastic (Faience or Quarry)	•	•
Seconds	Unglazed	Vitreous		Call Your Suntile Dealer	Call Your Suntile Dealer
		Impervious			

Suntile is a genuine clay tile embodying Color Balance

Suggestion Suntile

A square bathroom, individualized, personalized and characterized by modern design and use of color-balanced Suntile. Floor border is laid in 6"x6" units of glazed camprest Suntile in antique brown; floor field of 3"x3" units glazed camprest Suntile in square pattern design in the complementary color of national blue followed by apricot, antique brown and peach. The base is 6"x6" units in antique brown, blending into two courses of 6"x3" units, set vertically, of glazed Suntile walltile in apricot. The balance of the 6"x3" units is peach, topped with a 3"x3¼" cap in apricot. Every second course of the 6"x3" glazed Suntile walltile is broken with a horizontal line made up of 3"x½" Suntile liner units in antique brown and national blue. Plumbing fixtures are blue . . . color complementing the treatment of the Suntile wainscot.

Different, simple, attractive . . . this petite Suntile bath is composed entirely of $1\frac{1}{16}$" square glazed camettes. A modern, heightening effect is accomplished by the vertical stripes in the wainscot. The square-striped floor is but a repetition of the same three color-balanced Suntile colors . . . peach, apricot and frosty white. These are complemented by the light blue tint on the painted upper walls and ceiling, by the shower curtain and by the plumbing fixtures in two tones of blue.

Suntile

A powder room for milady in the ever appealing and flattering color combination of greens and pale orchid. The wainscot of 3"x3" units of glazed Suntile walltile in vert-de-mar green is set diagonally . . . trimmed with a 6"x1" cap and a 4¼"x5" base in deeper ming green. The floor field is laid in 3"x3" units of glazed camprest Suntile in shamrock green with a border of 3"x3" units and 3" diagonals in ming green. Pale orchid plumbing fixtures and decorated light orchid wallpaper complement the color-balanced Suntile greens of the wainscot and floor.

Suggestions

A modern bath done in the modern manner with color-balanced Suntile in the old time color favorites, lilac and green. Wainscot is composed of 6"x12" units, set vertically, of glazed Suntile walltile in frosty white and striped with horizontal bands of 6"x2" units in lilac. The 6"x2" cap and the 6"x3¾" base is plum. The floor border is laid in 6"x6" units of glazed camprest Suntile with the field, also of glazed camprest Suntile, of 3"x3" units in lilac. The bath tub and plumbing fixtures together with painted walls in complementary light greens, complete the color-balanced effect.

Suntile

Bright with color-Right for life

CEILING and walls of 1-1/16″ square Suntile glazed camettes in azure blue with decorative treatment in deeper turquoise blue. Turquoise blue wainscot in 4″x4″ Suntile glazed faience with a richly decorated cap of 2″x6″ faience units. Sanitary base around entire room, together with the step-platform before the tub of 6″x6″ units Suntile glazed faience in peacock blue.

Floors of 3″x3″ units of Suntile glazed faience in turquoise, azure and peacock blues . . . decorative floor insert is an embossed design, carried out in Suntile deluxe colors of analogous and complementary hues.

Face of tub dressed with 4″x4″ Suntile glazed, raised-line, polychrome faience inserts. Window, door (not shown) and tub recess trimmed with 6″x2″ Suntile glazed faience rope molding in peacock blue.

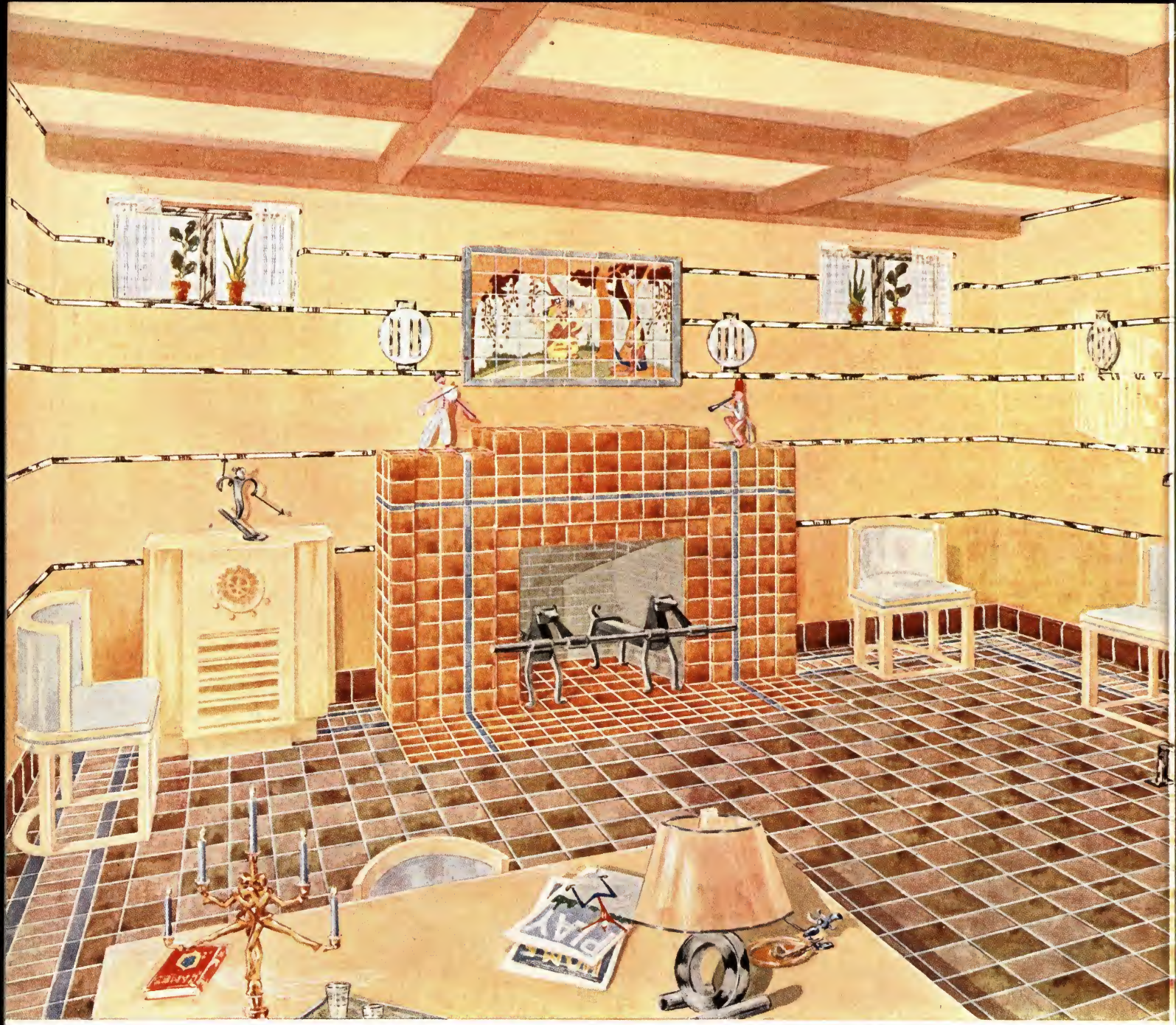
Back and side panels over tub done in 1-1/16″ square Suntile glazed camettes, banded with 4″x2″ and 4″x1″ Suntile glazed faience units in peacock blue. Decorative borders made up of 4″x4″ Suntile glazed, raised line polychrome faience inserts.

Symbolic dolphin panel in the rear wall of tub recess made with embossed, hand decorated Suntile faience units, 8¼″x8¼″ and special size pieces.

Color Balance in a Suntile ★Faience Bath

With its soft, soothing rhythm of tone-blending blues, this all Suntile bath represents the ultimate in tile artistry . . . a room richly combining the utilitarian value of the bath with a definitely modern note portraying exquisite color distribution . . . of colors in authentic balance. Embossed floor and over bath insert panels add a highly decorative effect, while plumbing fixtures of color with fittings of chrome contribute to the eye filling beauty of the ensemble. Your local Suntile dealer's showroom is equipped with "The Rainbow Chest"—to enable him to demonstrate authentic, color balanced combinations to you. He will show you in actual Suntile the colors that best harmonize with or complement the color of your plumbing fixtures. See him. Save both time and money by his all-inclusive color recommendation service.

★ Faience (fay-yahnce) gets its name from Faenza, a town in Italy, noted for its fine, richly colored, glazed earthenware. In tile terminology, faience denotes tile made by hand by the plastic method, which may be glazed or unglazed. Faience tile is characterized by a certain artistic unevenness, a thicker body and rich, tone-varying coloring.



ABOVE the fireplace a decorative Suntile panel, in elfin design, touches a light note. It is done in Suntile deluxe colors, in 4¼″x4¼″ units with a 1″ molding. The mantel is formed with 4″x4″ units of Suntile glazed faience in mummy tan and striped with 4″x1″ units of blue-bird blue. The color scheme of the modern bar is handled similarly — with the addition of horizontal stripes in the deeper tones of nut brown, carried out in 2″x4″ units of Suntile glazed faience. The floor field is laid in 6″x6″ units of Suntile unglazed multichrome pavers — the alternating colors being sand tan and sand buff. The border is 4″x6″ units of Suntile unglazed pavers in sand buff, 3″x6″ units of sand tan and 3″x6″ units of Suntile glazed faience in blue-bird blue. A sanitary base around the entire room is Suntile glazed faience in nut brown.

Suntile

Bright with color-Right for life

SUNTILE in authentic color balance makes this cellar a joyously modern recreation room. Its color scheme is autumnal. It bespeaks happy times, yet has a color quality suggesting well mannered restraint. Modernity is the keynote — with sanitation the result. The soft-toned multi-chrome Suntile floor seals out moisture and dampness, yet affords an ease of cleaning that permits of flooding with water. The sanitary base, joining floor with walls, serves a double purpose . . . its utility is cleanliness; its aesthetic function is color-balance. It blends the lighter wall tints with the deeper shades of the Suntile floor. Blues in the Suntile panel together with the thin blue stripings in the mantel and bar furnish just enough of contrast to break any feeling of monotony.

Your local Suntile dealer is equipped with "The Rainbow Chest" to efficiently and quickly demonstrate authentic color balance to you. See him and see modern color magic performed — with all the mysteries removed.

a genuine clay tile embodying Color Balance

INDIAN IVORY wainscot in 4¼"x 4¼" glazed Suntile walltile, trimmed with a 6"x2" cap, a 6"x½" liner and a 4¼"x4¼" base in Holland blue. Floor laid in unglazed ¾" square Suntile vitreous ceramics of dark blue and yellow in geometric pattern . . . in exact color balance with the Suntile wainscot, walls, cabinets and ceiling. Sink drainboards made with 3"x3" glazed camprest Suntile in Indian ivory and trimmed with 2"x6" units glazed camprest Suntile in Holland blue.

Suntile Blues . . . *Color Balanced* with Yellow

Suntile
Bright with color-Right for life

The kitchen — it's *her* exclusive domain. Here color combinations should absolutely satisfy . . . not just for today, but for every day. Authentic, scientifically measured color-balance makes daily living and working within "those four walls" so much more pleasant.

Here Suntile blues and yellows — color balanced with each other and with walls, ceiling and fixtures — make this kitchen a cheery, practical, orderly workshop of the home. Color balance in the kitchen helps women to better express their personalities in color in the selection of accessories—table and chairs, utensils and dishes, drapes and decorations.

Before you build or remodel, see your local Suntile dealer. His showroom is equipped with "The Rainbow Chest" to quickly show you authentically balanced combinations of *her own* favorite colors. His advice on color and his knowledge of color balance are available to you without obligation. See him first and save.

Suntile Suggestions

Utilitarian simplicity is the keynote of this color-balanced Suntile bath. Wainscot is 4¼"x4¼" units of Suntile walltile in old ivory with a 6"x½" liner, a 6"x2" cap and a 4¼"x5" base in the neighboring, low-value color . . . garnet. The floor is laid in 2 3/16" units unglazed Suntile yellow ceramics and 1 1/16" units Suntile glazed ceramics in American Beauty red and the same size unglazed yellow ceramics. Tub and plumbing fixtures together with painted wall tints complete the harmonious color-balanced effect.

Spaciousness is accented in this longer than wider bathroom by careful design and use of color-balanced Suntile. Wainscot is 4¼"x4¼" glazed Suntile walltile in French blue, topped with a bull nose cap of the same size and color. The base is composed of 4¼"x5" units in sky blue. The outer border of the floor in the same color is 4¼"x4¼" glazed camprest Suntile while the saw-tooth inner border is 3"x3" units in Holland blue. The field is laid in 3"x3" units glazed camprest Suntile in sky blue, set diagonally. Streamlined plumbing fixtures are white. The Suntile insert panel of mermaid design is made of decorated 4¼"x4¼" units in analogous and complementary colors . . . in authentic color-balance with the color scheme of the room.

Suntile Suggestions

Modernity in the average size bath. Wainscot is 6"x3" units of Suntile walltile in rose pink . . . topped with a 6"x1" cap in burnt rose with the same color used for the base in 6"x6" units. The floor border is also 6"x6" units, but in glazed camprest Suntile. The field is laid in 3"x3" units of glazed camprest Suntile with alternating angular stripings in national blue and burnt rose.

Ultra modernism . . . expressed in color-balanced Suntile. The wainscot treatment exemplifies the modern mass pattern idea. It is carried out in platinum grey and midnite blue with just a single touch of canary yellow. Units are 4¼"x4¼" and 4¼"x2⅛". The cap is 4¼"x4¼" units while the base is 4¼"x5". The floor is laid in $2\frac{3}{16}$" square Suntile unglazed ceramics in black and dark blue with pattern borders in $1\frac{1}{16}$" square Suntile ceramics in yellow and dark blue.

A Chart of Your Money's Worth

16 Points of Comparison

NOTE: . . . The answers herein are based upon our opinion from average products installed in the ordinary manner, and may be in certain cases too general for particular products or special installation.

	Structural Glass	Terrazzo	Marble	Rubber, Linoleum, Asphalt, Cork	Treated Cloth or Paper	Coated Wallboard	Porcelain Enameled Sheet Steel	Zinc-Back Products	Synthetic Plastics	NOTE: There are regular types of Suntile to meet every application. These answers are based on the use of the "right tile in the right place." **Suntile**
1 Is the product fireproof?	✓	✓	✓			?	✓	?	?	Yes, absolutely fireproof ✓
2 Are its installation materials fireproof?	?	✓	✓			?	?	?	?	Yes, sand, lime and cement ✓
3 Is its surface finish immune to the mar from a burning cigarette?	✓	✓	✓				✓		?	Yes, it is burnproof ✓
4 Is it practical to use on floors, walls and ceiling?		?	✓	?						Yes, there's Suntile for every place ✓
5 Is it colorfast?	?	?	?	?	?	?	?	?	?	Yes, for life ✓
6 Is it stainproof?	✓						✓		?	Yes, it will not discolor ✓
7 Is it unaffected by ordinary acids, alkalies or alcohols?	✓						?		?	Yes, except on special glazes ✓
8 Is its surface non-absorbent and waterproof?	✓			?	?	?	✓	✓	✓	Yes, glazed, or impervious ✓
9 Is it free from upkeep cost of waxing, polishing, varnishing or painting?	✓	✓	✓	✓			✓		✓	Yes, strictly so ✓
10 Is its installation unaffected by severe or continued dampness?		✓	✓						?	Yes, it remains unchanged ✓
11 Is its installation unaffected by severe or continued dryness?		✓	✓	?		?	?	?	?	Yes, it remains unchanged ✓
12 It is adaptable to indoor and outdoor use?	?	✓	?				?		?	Yes, it is weatherproof ✓
13 Is it easy to clean?	✓	?	✓	?	?	?	✓	?	✓	Yes, with a damp cloth or flooded with water ✓
14 Is it easy to keep clean?	✓		✓	?	?	?	✓	?	✓	Yes, requires no special treatment ✓
15 Is its installation vermin-proof?		✓								Yes, set full in cement ✓
16 Does it have color-balance?	?	?	?	?	?	?	?	?	?	Yes, only Suntile has it ✓
Percentages ➡ Answers marked with a ? figured at one-half value	62½	62½	65⅝	28⅛	15⅝	25	62½	28⅛	56¼	100%

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Suntile

Bright with color-Right for life

To architects . . .
their clients . . .
prospective builders . . .

Suntile 5 point service

Color . . . . all Suntile colors are scientifically developed for authentic color-balance by actual measurement of the three dimensions of color: 1. hue; 2. value (brightness); 3. chroma (purity).

Body . . . . development of all-white Suntile bodies, of various specifications, to guarantee reproduction of clean colors. All color glazes are interchangeable on all body types.

Display . . a flexible display system to demonstrate authentic color-balanced combinations in actual Suntile; and to permit rapid and complete changes of many and varied color schemes.

Balance . . . to facilitate selection of the entire decorative scheme, your Suntile dealer will show color samples of plumbing fixtures and wall tints in correct color relation with Suntile. His showroom is the one place where all color factors can be balanced.

Installation. because quality of installation is of paramount importance to the real value of tile, only able and responsible contractors are permitted to handle Suntile.

Suntile
Bright with color-Right for life

The Cambridge Tile Mfg. Co.

CINCINNATI, OHIO

Factories: CINCINNATI, O., INDIANAPOLIS, IND.

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GIBSON & PERIN CO. CINCINNATI

HANLEY COMPANY

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HANLEY UNGLAZED FLOOR AND WALL TILE

The Hanley Company, Leading Factors in the Field of Burned Clay and Shale Building Materials, operates three modern plants producing distinctive types of unglazed floor and wall tile shown herein and also a complete line of glazed structural units, enameled, glazed and face brick. These are shown in Sweets Architectural Catalogue (Refer to manufacturers' index).

Hanley unglazed floor and wall tiles are manufactured from skillfully blended selected natural clays and shales, formed in a plastic state and specially burned at exceedingly high temperatures, to produce various natural rich colors in five different types of hard-burned vitreous tile.

HANLEY FLAME-TINTED TILE: Distinctive for their gradually blended varying soft tones of color, smooth-textured surface and slightly rounded edges producing a hand-made effect. Each color range may be had in any pattern or treatment. All flame-tinted tile are furnished with slightly rounded (fettled) edges, unless square edges are specified.

HANLEY EVEN-TONE TILE: Made from the same selected blends of natural clays and shales as flame-tinted tile, but burned by a different method to produce an even tone of rich color throughout the body and surface. A slight variation of shade in the full range adds interest to the pattern. Slightly rounded or square edges may be obtained in this type of quarry tile.

HANLEY RED QUARRY TILE: A rich cherry - red hard-burned Bradford shale tile, having not more than ½ of 1% absorption and a smooth easily cleaned surface. They are particularly appropriate for locations demanding durability, cleanliness and attractiveness. Tests of every description undertaken by reputable laboratories and actual service conditions have proven the superiority of Hanley quarry. Perfected grade quarry tile (ground on four sides) may be laid with very narrow joints. Tile may be obtained with smooth or non-skid (diamond mesh) surface. A complete line of bullnoses and sanitary base are available.

HANLEY CERAMIC TILE: Distinctively different rich natural and flashed colors add interest and attractiveness to this low cost material. The hard-burned vitreous clay and shale bodies are resistant to stains and chemicals and will withstand severe wear. Cushion edge tile are made only in sizes of 2x2, 4x2 and 4x4. All 4x4 ceramic have grooved backs to increase the setting bond. All sizes may be obtained loose or mounted on paper in patterns desired. Cove base and bull-nosed cap are also available for use as wall tile trimmers.

HANLEY DUTI-TILE: (Packing house tile). Specially developed for use in dairies, ice cream plants, packing and food preparation plants, chemical plants, etc., where a super-durable, extremely sanitary floor is demanded which will withstand acids and the severe use to which they are subjected. Absorption does not exceed ½ of 1%. Size 8x3⅞x1⅜ thick.

—DESCRIPTION OF GRADES—

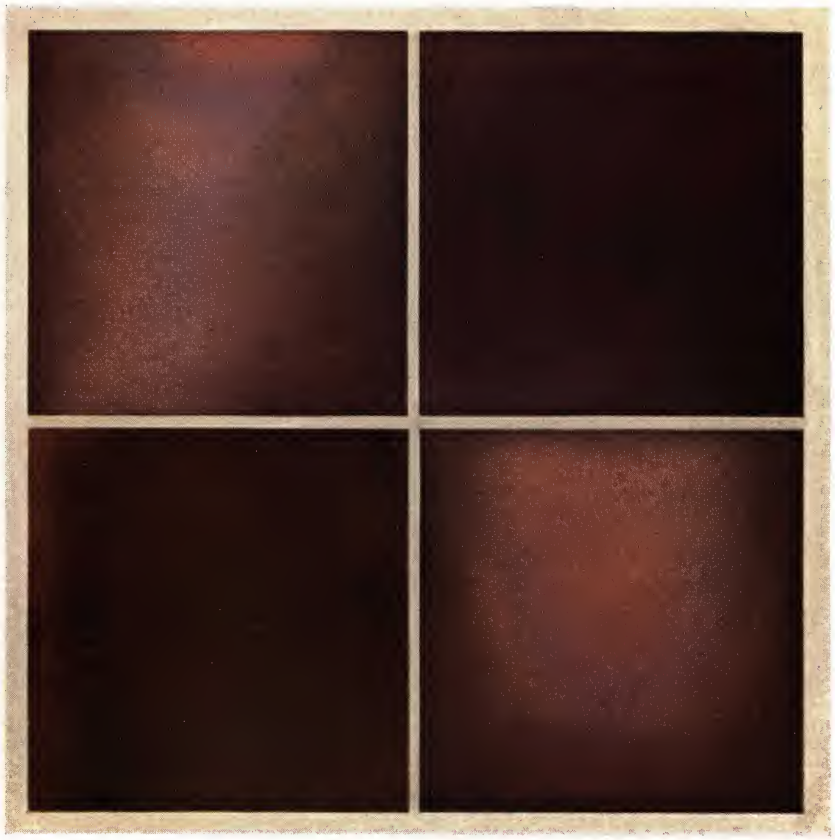
PERFECTED—selected from standard grade and ground on all edges to exact dimensions, permitting installation with narrow string line joints. Only square edged tile obtainable in this grade.

STANDARD—the best grade of tile from the kiln. Sound and solid, approximately level and regular in lines with only slight variations in lengths and widths. Sorted to shades designated.

SECONDS—rejected from standard grade due to imperfections consisting of slightly broken corners and chipped edges. There are no cracks running into the tiles. They are not selected with care as to level surface and regular lines.

RUBBLE RANDOM—irregular broken pieces in various standard colors, sizes and thicknesses.

HANLEY FLAME TINTED QUARRY TILE



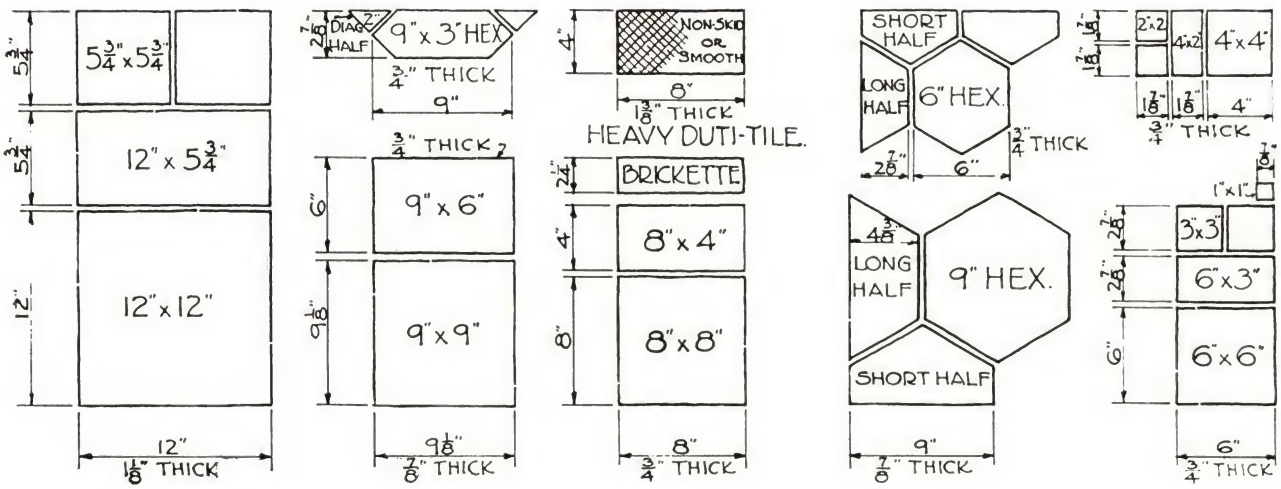
12" x 12" x 1⅛"
SHADES 220 - 221 RANGE

A New Product Developed by Hanley — Flame-tinted 12x12x1⅛ quarry tile in shades 220-221 full range. These tile have distinctive flashed gun-metal tones that would add charm and character to residential entrances and stair halls.

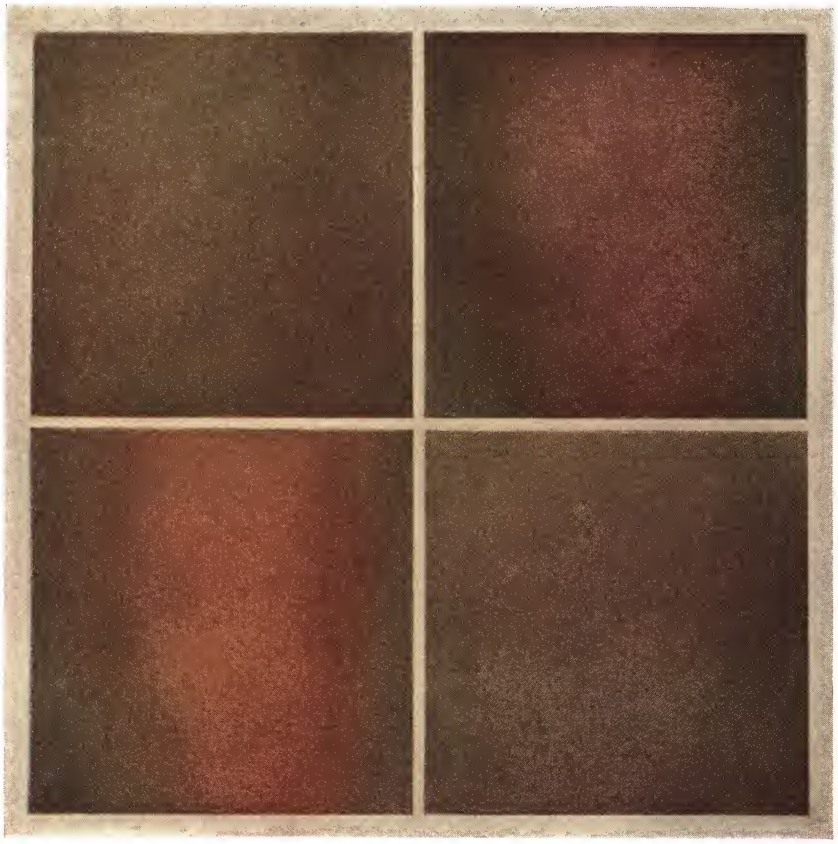
They are also perfectly adopted to outdoor uses for terraces, sidewalks, approaches or as garden stepping stones. In the latter case they may be set directly on a shallow sand bed.

DIAGRAM OF STANDARD SIZES AND SHAPES

Diagonal halves obtainable in all square tile sizes, except 1x1. Tile may vary slightly from actual dimensions given.



HANLEY FLAME TINTED QUARRY TILE



12" x 12" x 1⅛"
SHADES 120 - 121 RANGE

A pleasing Grey-Green Flashed range of shades, suggestive of early autumn colors in unusual tones of soft greens, blending into warm reddish shades. These tile are particularly attractive for laundries, game rooms, etc., as well as for exterior terraces, promenades, roof gardens, and for garden walks or swimming pool approaches and surrounding areas. A truly fine product worthy of dignified surroundings.

GENERAL SPECIFICATION FOR INSTALLATION of HANLEY TILE

Furnish all labor and materials for the completion of all tile work. The "Basic Specification for Tile Work", 1937 edition (K-300) as issued by the Tile Manufacturers Association, 19 W. 44th Street, New York City, is hereby made a part of this specification insofar as it is applicable.

All tile (give type of tile; Ceramic, Flame-Tinted, Eventone or Quarry) to be standard grade as manufactured by the Hanley Co., Bradford, Pa. Refer to Hanley catalogue for designs, color numbers, etc. Tile shall be provided in the following rooms or spaces, in sizes, designs, and colors as specified or detailed.

Names of rooms.....

Floor Field—Sizes (list sizes of tile) in Pattern No.....

Colors—(List range or Shade Numbers).

Floor Border—(Give colors and sizes).....

Base—Tile for base to be cove base No..... with necessary angles, stops and plinths in Hanley shade number.....

Wainscoat—Provide all necessary tile and angles in sizes as detailed in the following shades (list shade numbers). Where no detail is shown, tile shall be laid (broken joint), (straight joint) or in Pattern No.....in Hanley Tile Range (or Shade No.).....Sizes..... Bullnose tiles with ¾" radius to be used at all external corners and around all uncased openings.

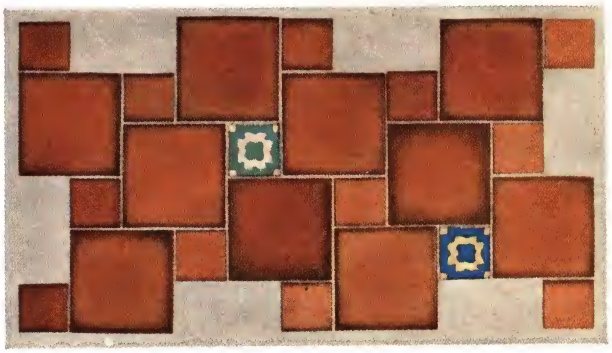
Cap—Shall be (Give size, number and shade).....
.....

Where unusual construction conditions or special uses may require specific methods and materials for setting, we are prepared to furnish specifications for such purposes. Our consultants are at the service of architects, engineers and contractors.

Hanley Red Quarries, Shade 10, are designed for utility as well as decorative purposes in and about the home. Porches, sun decks, terraces, etc., all lend themselves to the use of these tile which are impervious to extremes of weather. Tile base, bullnoses, stair treads, and threshold tile are available.

HANLEY CERAMIC TILE COLORS AND DESIGNS

DESIGN NO. 2004 (Stagger)



DESIGN NO. 2004 (Stagger)

SIZES: 4x4, 2x2 (3/8" Thick)
COLORS: Shades C - 225 - 226
DARK AUTUMN FLASHED
REDDISH BROWN BLEND
FETTLED EDGES

This Pattern Shows the Flashing

in Hanley Ceramics to good advantage. The sewing room, sun parlor, game room, rumpus or recreation room are all vastly improved at low cost by the use of Hanley Fettled Edge Ceramic (all 3/8" thick).

To enhance the decorative value of these floors we are prepared to furnish 2x2 and 4x4 glazed inserts, consisting of light and dark shades of green and blue glaze, the latter applied to the depressed portions of the tile, while the raised portions are in varying shades of buff.

DESIGN NO. 1002 (Random)

Design No. 1002 (Random)

SIZES: 4x4, 4x2, 2x2 (3/8" Thick)
COLORS: Shade C - 210, Full Range of SALMON with a slight shade variation,
FETTLED EDGES

This Color Has Many Uses

due to its subdued nature and reasonable uniformity of smooth color and light reflection characteristics. An ideal wainscoting material where a glazed tile would not prove suitable. Fettled edges enhance the appearance of these tiles.

DESIGN NO. 2002

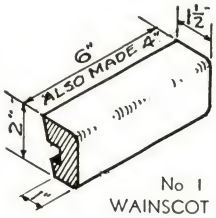
Design No. 2002

SIZES: 4x4, 4x2, 2x2 (3/8" Thick)
COLORS: Shade C - 10 - CHERRY RED - SQUARE EDGES.
2x2— Shade - C - 6 - Varying Shades of GUN-METAL BLACK

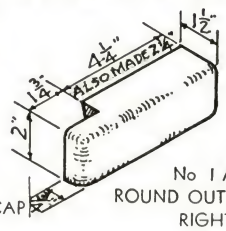
Hanley Red Ceramic (Shade C-10)

is manufactured to secure a hard body, durable tile that is non-absorbent. These tile are vitreous by reason of their ½ of 1% absorption. They are tile of exceptional merit and are adopted for use where a quarry tile would prove too heavy. A complete line of base, cap and bullnose will permit these tile to be used for wall surfaces where a durable wall finish is desirable. The color and quality of Henley Ceramics cannot be altered by time or the elements.

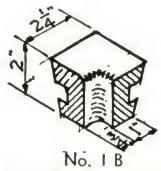
FLAME-TINTED, EVEN-TONE AND QUARRY TILE TRIM



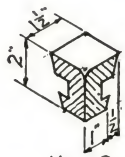
No 1
WAINSCOT CAP



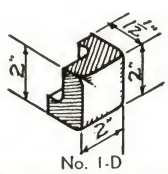
No 1 A
ROUND OUT ANGLE
RIGHT



No. 1 B
ROUND IN ANGLE

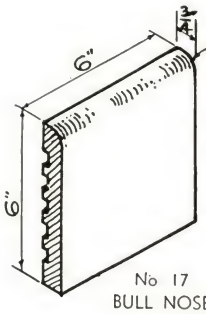


No. 1-C
SQUARE IN ANGLE

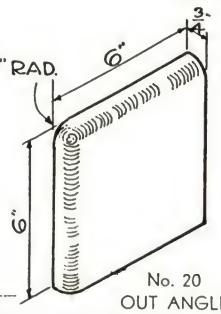


No. 1-D
UP AND DOWN ANGLE

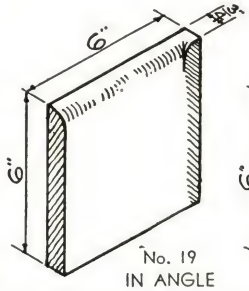
No. 1-E
OUT ANGLE



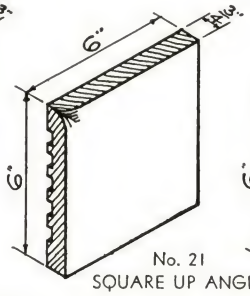
No 17
BULL NOSE



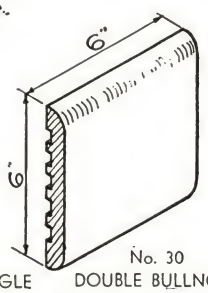
No. 20
OUT ANGLE



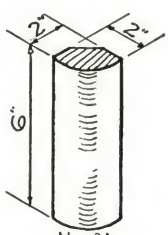
No. 19
IN ANGLE



No. 21
SQUARE UP ANGLE

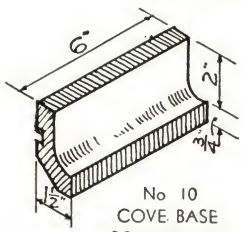


No. 30
DOUBLE BULLNOSE

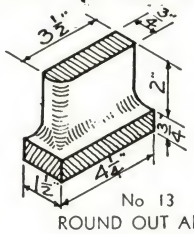


No. 31
QUARTER ROUND

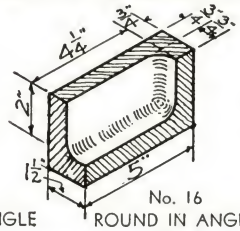
BULLNOSE TILE MADE ALSO IN SIZES OF 3x3, 4x4, 8x8, 9x6, 9x9, 12x5¾—ORDER BY No. AND SIZE



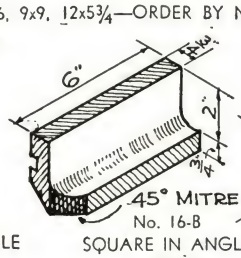
No 10
COVE BASE
SQUARE TOP



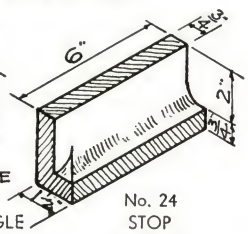
No 13
ROUND OUT ANGLE
RIGHT



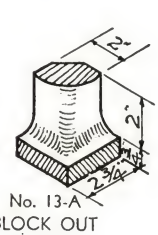
No. 16
ROUND IN ANGLE
LEFT



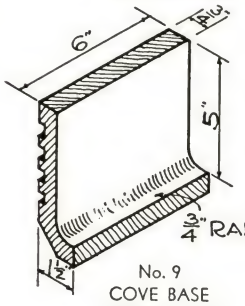
No. 16-B
SQUARE IN ANGLE
PAIRED



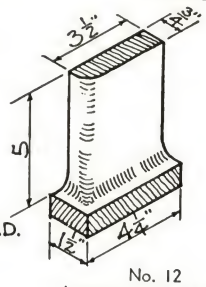
No. 24
STOP
RIGHT



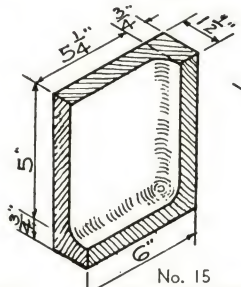
No. 13-A
BLOCK OUT
ANGLE



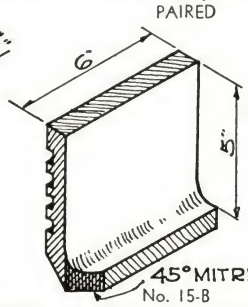
No. 9
COVE BASE
SQUARE TOP



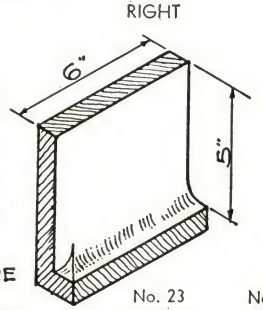
No. 12
ROUND OUT ANGLE
RIGHT



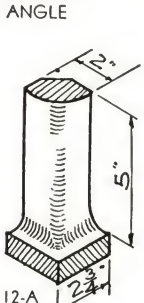
No. 15
ROUND IN ANGLE
LEFT



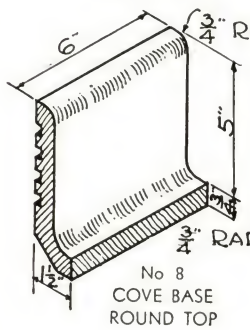
No. 15-B
SQUARE IN ANGLE
PAIRED



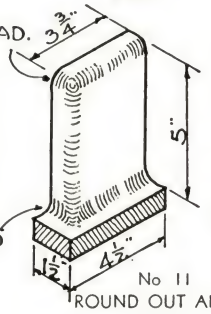
No. 23
STOP
RIGHT



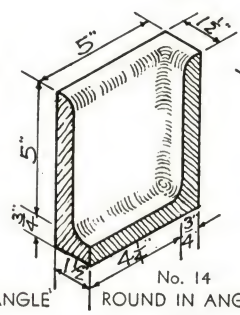
No. 12-A
BLOCK
OUT ANGLE



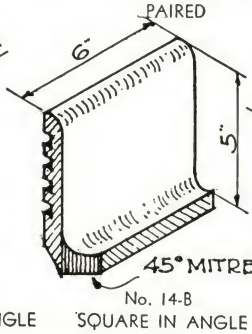
No 8
COVE BASE
ROUND TOP



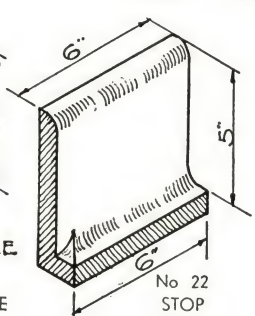
No 11
ROUND OUT ANGLE
RIGHT



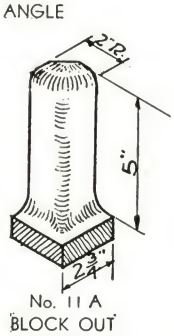
No. 14
ROUND IN ANGLE
LEFT



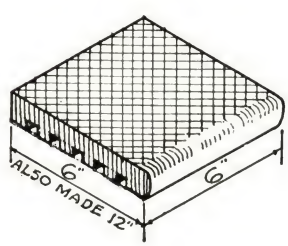
No. 14-B
SQUARE IN ANGLE
PAIRED



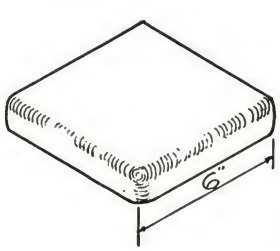
No 22
STOP
RIGHT



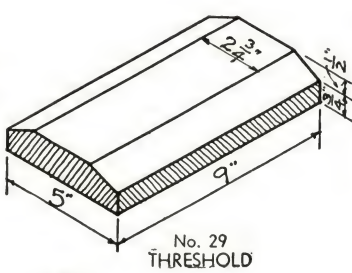
No. 11 A
BLOCK OUT
ANGLE



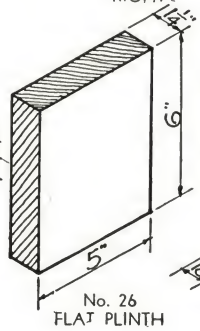
No. 32
STAIR TREAD OR WINDOW STOOL
MADE NON SKID OR SMOOTH SURFACE



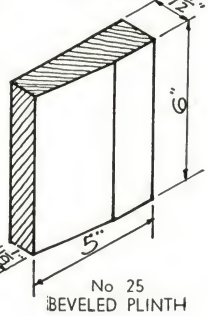
No. 32-A
OUT CORNER



No. 29
THRESHOLD



No. 26
FLAT PLINTH

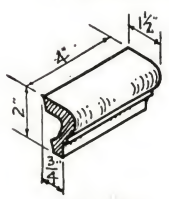


No 25
BEVELED PLINTH

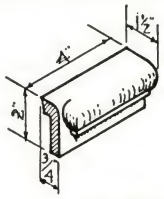
HANLEY CERAMIC TILE SIZES, COLORS AND SHAPES

SIZE DIAGRAM	SIZES	THICK-NESS	COLOR RANGE						
			COLOR DESCRIPTION		SALMON	CHARCOAL BLACK, * GUN METAL	DULL RED FLASH	CHERRY RED	M AUTUMN BROWN BLEND
4" 4"×4" 4"×2" 2"×2" 3/8" THICK	4 x 4 4 x 2 4 x 1 2 x 2 2 x 1 1 x 1 2 x 1/2 1 x 1/2 1/2 x 1/2	3/8"	SHADE NUMBERS	DARK		* C-5	C-20	C-10	C-225
				MED.	C-210	C-6			C-226
				LIGHT					

All Colors made in All Sizes.
1/2" Sizes on Order Only.

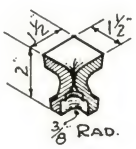


No. 3000
CAP

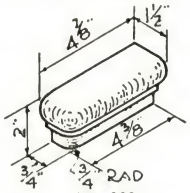


No. 3001
STOP
RIGHT

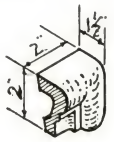
No. 3002
SQUARE IN ANGLE



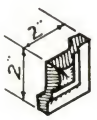
No. 3003
ROUND IN ANGLE



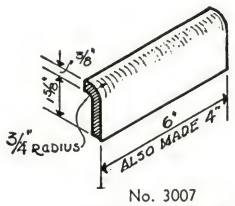
No. 3004
ROUND OUT ANGLE
RIGHT



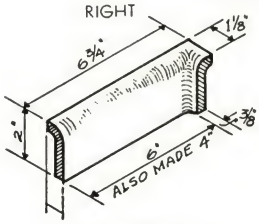
No. 3005
DOWN ANGLE



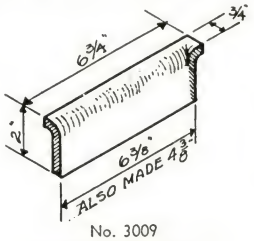
No. 3006
UP ANGLE



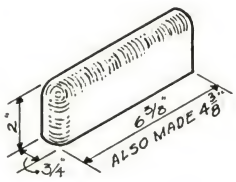
No. 3007
BULLNOSE CAP



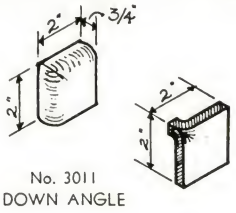
No. 3008
ROUND IN ANGLE
LEFT



No. 3009
SQUARE IN ANGLE
LEFT

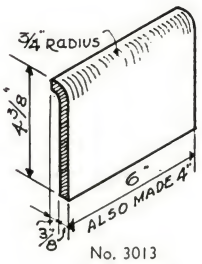


No. 3010
ROUND OUT ANGLE
RIGHT



No. 3011
DOWN ANGLE

No. 3012
SQUARE UP ANGLE



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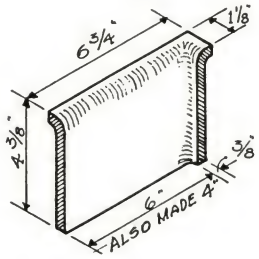
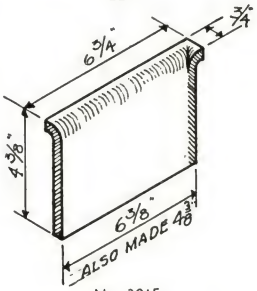
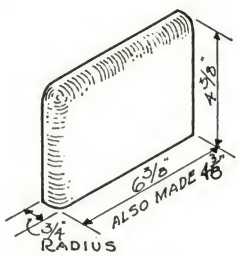
BULLNOSE



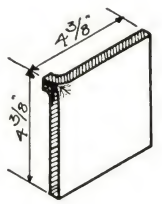
No. 3014
ROUND IN ANGLE
LEFT



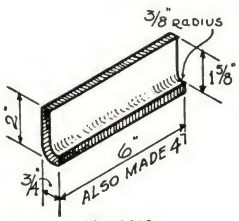
No. 3015
SQUARE IN ANGLE
LEFT



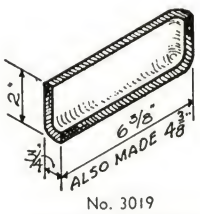
No. 3016
ROUND OUT ANGLE
RIGHT



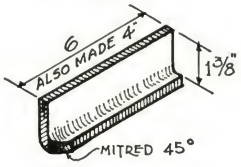
No. 3017
SQUARE UP ANGLE



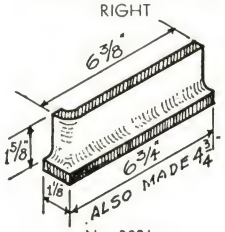
No. 3018
COVE SHOE



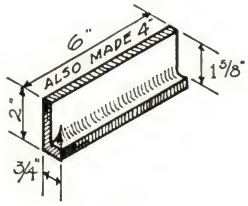
No. 3019
ROUND IN ANGLE
LEFT



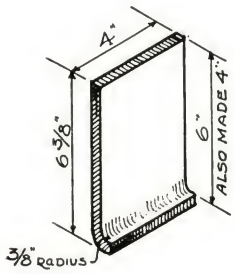
No. 3020
SQUARE IN ANGLE
PAIRED



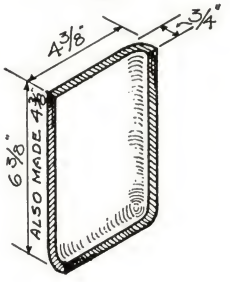
No. 3021
ROUND OUT ANGLE
RIGHT



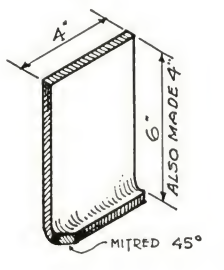
No. 3022
STOP
RIGHT SHOWN



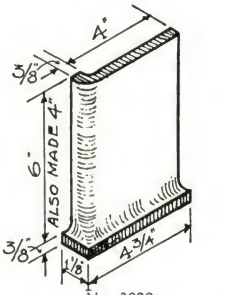
No. 3023
COVE BASE
No. 3024—4" HIGH



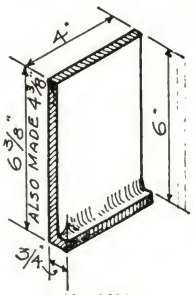
No. 3025
ROUND IN ANGLE
LEFT
No. 3026—4" HIGH



No. 3027
SQUARE IN ANGLE
PAIRED
No. 3028—4" HIGH



No. 3029
ROUND OUT ANGLE
RIGHT
No. 3030—4" HIGH



No. 3031
STOP
RIGHT
No. 3032—4" HIGH

B. MIFFLIN HOOD COMPANY

Manufacturers of Floor and Wall Tile

DAISY, TENN.

TELEPHONE OR TELEGRAPH, County 5606, Chattanooga, Tenn.

BRANCHES AND REPRESENTATIVES

ATLANTA, GA., B. Mifflin Hood Co., 686 Greenwood Avenue, N. E.
BOSTON, MASS., S. I. Frank, 21 Little Building, 80 Boylston Street
CHARLOTTE, N. C., C. H. Boone, Norwood, N. C.
CLEVELAND, OHIO, A. D. Land, Box 28, Garrettsville, Ohio
CHICAGO, ILL., W. M. Sullivan, 525 W. Roosevelt Road, Canal Station
DETROIT, MICH., Ira C. Preston, 9235 Agnes Avenue
KANSAS CITY, MO., W. D. English, 3318 Benton Boulevard
MIAMI, FLA., W. H. Burkhart, 1720 Congress Building
NEW YORK, N. Y., C. H. Vanderlaan, Inc., 103 Park Avenue
PHILADELPHIA, PA., W. Douglas Hood, DeLong Bldg.
PITTSBURGH, PA., Raymond Cox, Box 494, Beaver Falls, Pa.
TAMPA, FLA., W. G. Holly, 310 So. Morgan Street
WHEELING, W. VA., Wheeling Tile Co.

Product

HOOD'S FLOOR TILE.

For our Roof Tile page, see File Index.

Quality

Hood's tile is made from pulverized pottery, blended with high grade clay and shales.

DATA CHART—FLOOR TILE

Square		Rectangle		Triangle	
Size, in.	Thickness, in.	Size, in.	Thickness, in.	Size, in.	Thickness, in.
9 x9	¾	12x5¾	1	9 x9	¾
8 x8	¾ and 2	8x4	1½	8 x8	¾ and 2
6 x6	¾ and 2	8x3¾	¾	6 x6	¾ and 2
4 x4	½, ¾ and 2	6x9	¾	4 x4	¾ and 2
3¾x3¾	¾	6x3	½	3¾x3¾	¾
3 x3	½ and ¾	6x2¾	¾	2¾x2¾	¾
2¾x2¾	¾	6x2¼	1		
2¼x2¼	1	8x2¼	1	End Angles	
1⅝x1⅝	¾	4x2¼	1		
Diamond 7x12x¾		6-in. hexagon x ¾-in. thickness. 8x4-in. elongated hexagon in ¾-in. thickness.		8 x3¾	¾
				6 x2¾	¾

Specials: Bullnose one side, bullnose two sides, roll and square top cove, base, internal and external angles, also wainscot fittings, etc., to match. Also 6x6x1½ bullnose steptreads.

Colors

Hoodbuff Tiles—Include a full range of natural colors from a light buff through intermediate tones of golden buffs, tans and to an occasional warm brown or extremely dark tan.

Hoodgray Tiles—Run in a varying range of gray tones and here and there an almost invisible spot of warm tan showing. This comes out just enough to give the floor warmth, but not enough to be noticeable. This color range is suitable for the more formal floors.

Pyro-Tynt Quarries—Include a full range of natural fireflashed shades in a random range, from slight flashed reds to deep greenish-bronze. The gradation of color and spotting is absolutely at random and no attempt can be made to sort for any particular color effect. For an extreme range of colors mingle Pyro-Tynt with the lighter buff shades of the Aragon Tile.

Aragon Quarries—Include a range of shades from a light cream buff through the solid pinkish tones, to darker tans and speckled russets, with an occasional purplish-brown tone. An extremely wide range can be effected by a mixture with the Pyro-Tynt Tiles, which will give a range from light cream buffs to dark greenish and purplish bronze.

Welsh Red—Light red tones, varying slightly.

English Red—Medium red tones, varying slightly.

Venetian Red—Dark red, as near uniform as possible in quarries.

Grades

Perfected—Carborundum ground after firing, on all edges to produce true dimensions and straight edges, permitting string line fine joints.

Standard—Represents the standard of Hood's manufacture, reasonably true and uniform.

Seconds—A good quality of tile with minor imperfections and defects.

Rubble Random—Tile of odd and irregular shapes possessing exceptional color value resembling autumn foliage. Comes in uniform thickness. Many artistic settings are made with Rubble Random.

Hood's "Quaramics"

"Quaramics" are mounted on paper sheets of approximately 2 sq. ft. each for shipping and setting. They are furnished in many harmonious and contrasting patterns. They are what is known as a plastic stiff mud tile as distinctive from the dry dust pressed.

¼ in. Thickness

2⅛x2⅛
2⅛x1 1/32
1 3/32x1 3/32

Triangles in 1 in. and 2 in. units

Cove Base and Cap in 1 in. and 2 in. units

Manufactured in quarry materials and colors, including green, blue and black.

Note: Special patterns designed by the architect will be mounted and furnished for slight additional cost. Sample boards cheerfully furnished on request.

Hood's Alluvial Clay Tiles

Hand-made, natural, restful, not glazed or metallic, human and artistic.

Sizes—From 2 in. x 2 in. through 12 in. x 12 in., including rectangles, triangles, hexagonal and special shapes. Tailored for individual jobs to meet specifications.

Colors—Alluvial clay tiles run in a range of light salmon reds, tans and pinks with all intermediate tones.

Hood's Cla-Slab Garden Blocks

Hand-made in sanded slop mould, with weathered edges and surfaces. Colors are natural burned clay.

Sizes—(1½ in. thick) 5½x5½, 5½x12, 5½x18½, 8¾x12, 12x12 and 12x18½ in. (to use a 1-in. joint when laid in ashlar pattern). We will be glad to make other special sizes to order.

Hand Fettled Pavers

Edges rounded by hand giving irregular hand-made effects. Furnished in all colors except uniform red.

Shapes

Special shapes, other than stock specials, will be executed in accordance with the architect's designs.

Samples

Samples and literature gladly sent on request.

KRAFTILE COMPANY

MAIN OFFICE AND PLANT
NILES, CALIFORNIA
(San Francisco Bay Area)

BRANCH OFFICES

NEW YORK, N. Y., 40 Worth Street
CHICAGO, ILL., 400 Rush Street
SAN FRANCISCO, CALIF., 525 Market Street

KRAFTILE PRODUCTS

Master Kraftile
Terra Cotta Wall Units
Ceramic Facings
Special Shapes
Swimming Pool Overflow Hand Rails
Swimming Pool Ladder Steps
Enameled Brick
Bathroom Accessories
Cutting Machines

MASTER KRAFTILE

Kraftile offers this new Master Kraftile to architects and builders as a revolutionary new wall tile product, unusual both as to size and economy.

Six inches by nine inches, New Master Kraftile makes possible unique decorative treatments. Wall tile units up to the present time have been conventional in size and shape. Little or no originality in interior designing could be expressed with these small standard units. With New 6x9 Master Kraftile, however, an architect is given more latitude in developing decorative wall treatment.

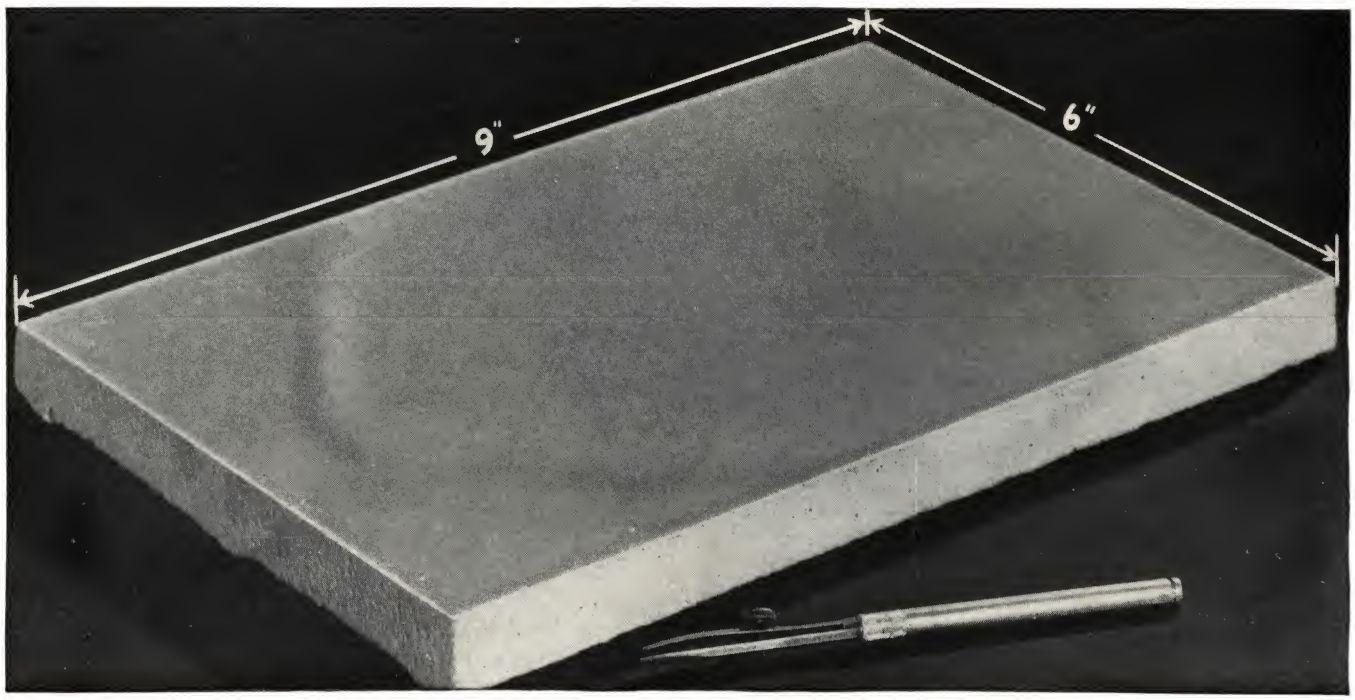
From a practical standpoint, New Master Kraftile can be installed for the same cost as the conventional 4¼ in. tiles, and for approximately *50 per cent less* than any other larger size tiles.

Too, New Master Kraftile's size of 6 x 9 is architecturally correct . . . one and one half times longer than its width . . . which is a still further reason why it is most desirable as a new, modern, wall tile for smartly designed bathrooms and kitchens of today.

Master Kraftile is available in any desired color.

HIGH FIRED
MASTER
Kraftile

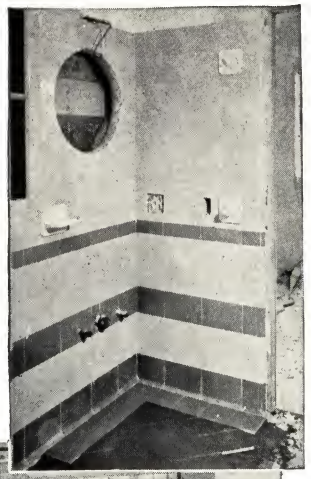
Complete Details and Specifications Sent on Request



You can quickly visualize the extraordinary size of the New 6x9 Master Kraftile by comparing the single Master Kraftile unit with the ruling pen beside it.

NEW 6 x 9 MASTER KRAFTILE OFFERS GREATER FREEDOM IN INTERIOR DESIGN

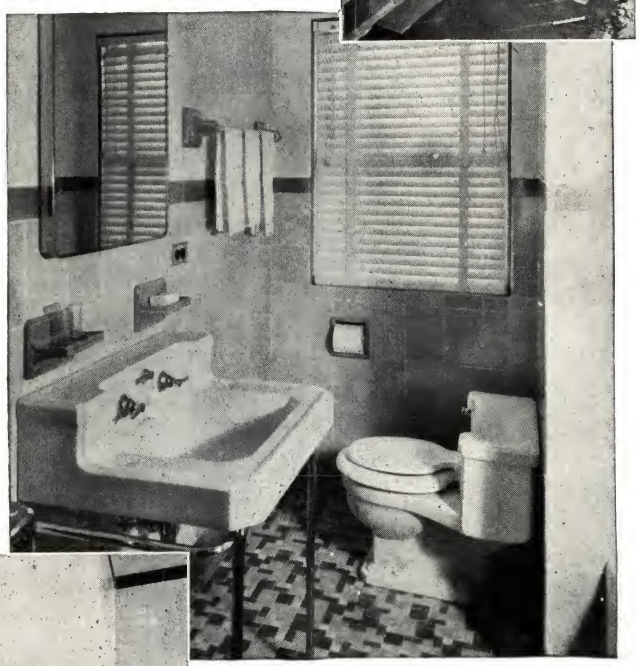
6 x 9 Master Kraftile provides architects with a revolutionary new size in tile that will lend itself to modern decorative schemes. For years wall tiles have been conventional in size and shape. Now New Master Kraftile increases possibilities of developing new wall designs in keeping with the trend for novel interior treatments.



Residence in Piedmont, California

COSTS NO MORE THAN SMALLER SIZE TILES!

A bathroom or kitchen can be *Master-Kraftiled* at the cost of conventional 4½ inch tiling. Thus rooms can be more modern, more original, and smarter, at no increase in expense!



Residence in Chicago, Illinois

COSTS MUCH LESS THAN OTHER LARGE TILES!

New Master Kraftile differs considerably from other tile of similar large size in two respects. One, its 6 x 9-inch size is architecturally correct. Two, a New Master Kraftile installation costs approximately 50 per cent less than other large tile installations!

EASIER TO HANDLE

The large size of Master Kraftile makes it easier to handle in shipping, unpacking, and erecting. This feature is a time saver and serves to keep down wall tile installation costs to a very low minimum. Laid in accordance with usual tile setting practice, there are fewer pieces of Master Kraftile to handle.

Residence in Wilmette, Illinois

HIGH FIRED

Kraftile

THE TERRA COTTA WITH THE 10 ADVANTAGES

Complete Details and Specifications Sent on Request

Master Kraftile
Terra Cotta Wall Units
Ceramic Facings
Special Shapes
Swimming Pool Overflow Hand Rails
Swimming Pool Ladder Steps
Enameled Brick
Bathroom Accessories
Cutting Machines

TEN OUTSTANDING ADVANTAGES OF ALL KRAFTILE

1. Unusual Affinity For Mortar

Because Kraftile is made from California clay, it has an unusual affinity to mortar—can never be loosened or separated clean from good quality mortar, if properly set.

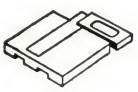
2. Higher Fired Than Most Terra Cotta

Kraftile is higher fired than most terra cotta. It is fired at pyrometric cone 8 or 2,354°F. The results: exceptional hardness — greater wearing qualities — resistance to acid. This unusual surface perfection permits using the finest glazes for finishing purposes.

3. Exceptionally Hard and Durable Glaze

Scratching tests reveal that even a mineral having the hardness of feldspar will not scratch or mar Kraftile. When subjected to alternate freezing and thawing of a severity not encountered even in nature, it has never shown signs of failure.

4. Special Sizing Process Controls Size Variations and Warpage



The unusual precision sizing process used in making Kraftile was pioneered by the KRAFTILE COMPANY, and revolutionized tile making. This process accounts for the unfailing control of size variations and warpage in all Kraftile.

5. Car Tunnel Kiln Fired

Kraftile is fired in the latest design car tunnel kiln, thus firing is strictly controlled—thus further perfect control of Kraftile quality.

6. One Source Only For All Terra Cotta Needs

The Kraftile line is so complete that an architect can be sure of getting, from one single source, the same quality, texture, and type of glazed products for an entire building.

7. Lighter Weight Cuts Handling Costs

Kraftile, although very light in weight, more than meets all crushing strength requirements of the U. S. Government. Result, lower handling costs in shipping —a minimum of labor and time in handling on the job.

8. Fast Delivery as Kilns Never Shut Down

Because Kraftile kilns are of the car tunnel type, they never shut down. Kraftile is manufactured in exceptionally fast time *without impairing its fine quality*. Kraftile has been produced and delivered to great distances practically as soon as it could be secured from a local source.

9. Beautiful Colors and Glazes

Kraftile is available in a wide range of beautiful colors and glazes. Color samples sent promptly on request. And any desired special colors, to conform to individual decorative treatments, can be produced by our interior decoration staff.

10. Both Engineering and Interior Decoration Staffs at Your Service

A complete engineering department to assist you in construction problems, and an interior decorating department to aid in interior designing are at your service.

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HIGH FIRED
Kraftile
THE TERRA COTTA WITH THE 10 ADVANTAGES

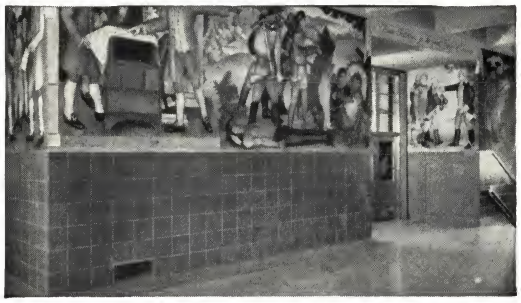
KRAFTILE
FOR ALL CONSTRUCTION PURPOSES
..... from one source .... of unvarying quality

The many outstanding advantages of Kraftile, and the completeness of the Kraftile line, promise architects and builders positive terra cotta quality available for all building purposes, *and from one single source.*

KRAFTILE CERAMIC FACINGS

This type Kraftile is especially designed for exterior facing of new or remodeled buildings. Available in many standard sizes and moulded shapes. Kraftile Ceramic Facings are easily adopted to all architectural designs. The material itself is particularly flexible.

Units may be easily cut on the job with an ordinary carborundum saw. *Interior* installations of Kraftile Ceramic Facings prove particularly effective from standpoints of smartness and practicability. Many modern and novel designs can be developed. And their permanence, low upkeep, and other advantages enjoyed by all terra cotta wall units, make Kraftile Ceramic Facings ideal for any number of interior tile installations.

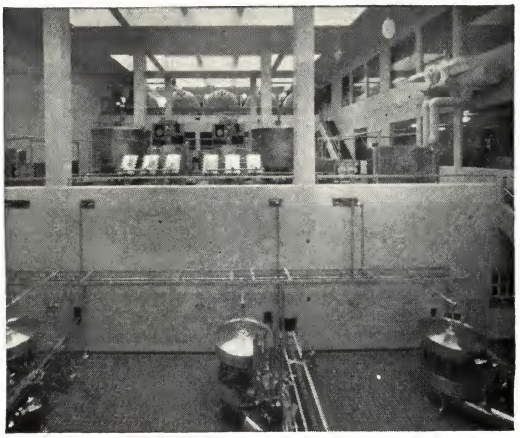


George Washington High School, San Francisco, California
MILLER & PFLUEGER, Architects

KRAFTILE TERRA COTTA WALL UNITS

Kraftile "Enameled Hollow Tile" "Precision Sized" structural units with a wall tile glaze finish. Its advantages are many: Colorful decorative finish of Wall Tile . . . Structural functions of Hollow Tile and Veneer . . . Endurance of burned clay products . . . Size, perfection of machined blocks . . Modern wall treatment . . . Structural wall and finish erected by one craft—*one overhead—one profit.*

Kraftile Terra Wall Units, installed, compare favorably in cost with ordinary enameled hollow tile. It costs less to set, and, being entirely void of recurrent maintenance expenses, is the most economical structural and finish wall material obtainable.



St. Louis Dairy Co., St. Louis, Missouri
J. K. WOLF, W. S. SUTTON, J. K. ANDERSON, Architects

KRAFTILE SPECIAL SHAPES

Kraftile manufactures all regular standard and special shapes commonly used. Returns and angles are also made with radius or square corners or with bevels as desired.

Park-Presidio Junior High School, San Francisco, California
W. H. CRIM, JR., Architect

HIGH FIRED
Kraftile
THE TERRA COTTA WITH THE 10 ADVANTAGES

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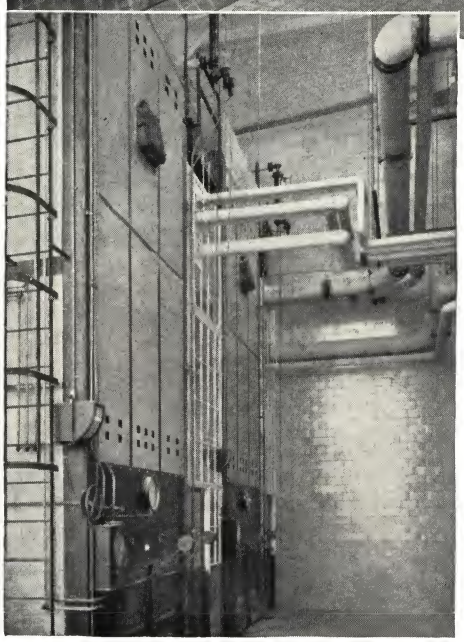
MASTER KRAFTILE

The introduction of this new wall tile marks a radical step forward in modern design. The effects possible to develop open a new field in tile decoration. Permit greater freedom of artistic expression than has been possible in recent years with tile of conventional size. Yet New Master Kraftile does not exceed the cost of 4¼-inch tiling. And, can be installed for approximately *50 per cent less than other large tile.* The fact that its size of 6 x 9 inches is architecturally correct adds another substantial reason why it offers a welcome new means to more original and more modern tiling of bathroom and kitchen walls.

Residence in Wilmette, Illinois

Residence Pool, Los Gatos, California



Boiler Room, Ford Motor Co., Richmond, California
ALBERT KAHN, Architect

KRAFTILE SWIMMING POOL OVERFLOW HAND RAILS AND LADDER STEPS

Kraftile One and Two-piece Overflow Hand Rails have been used on numerous public and private swimming pools throughout the country. Both *are machine run. The ends are sized true and square with the face so* they are generally *set with 3/16-inch joint,* resulting in a minimum of joint area. The tops are corrugated. The glaze on the top contains a non-skid substance. These Hand Rails insure a maximum of sanitation. No other built-up type could be as sanitary as these with a full glazed surface above the water line. All Kraftile Hand Rails are furnished in any one of the many Kraftile colors.

KRAFTILE ENAMELED BRICK

Kraftile Enameled Brick are of the same high quality as all Kraftile . . . are single fired, and will be made with any enamel color. Both the quality and appearance of Kraftile Enameled Brick compare to the finest wall tile installations. All brick are carefully graded and inspected before shipping.

and Kraftile Bathroom Accessories and Kraftile Cutting Machines

Complete Details and Specifications Sent on Request

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HIGH FIRED
Kraftile
THE TERRA COTTA WITH THE 10 ADVANTAGES

KRAFTILE

THE CHOICE OF ARCHITECTS AND BUILDERS FROM COAST TO COAST

1. **Cafeteria, Atlas Cold Storage Company**
   Green Bay, Wisconsin
   E. L. Anderson, Architect
2. **United States Air Station**
   Sunnyvale, California
   Bureau of Yards and Docks, Architect
3. **Sunshine-Buena Vista School**
   San Francisco, California
   Martin Rist, Architect
4. **Lobby, St. Louis Dairy**
   St. Louis, Missouri
   G. K. Wolf, W. S. Sutton, J. K. Anderson
   Architects
5. **Corridor, WWJ Radio Station**
   Detroit, Michigan
   Albert Kahn, Architect
6. **Operating Room, San Francisco Emergency Hospital**
   San Francisco, California
   Charles Sawyer, Architect
7. **United States Post Office and Court House**
   San Francisco, California
   Starks and Flanders, Architects
8. **Fire Engine House**
   San Francisco, California
   Walter E. Baumberger, Architect
9. **George Washington High School**
   San Francisco, California
   Miller and Pflueger, Architects

AND MANY OTHER IMPORTANT CONSTRUCTIONS

HIGH FIRED

Kraftile

THE TERRA COTTA WITH THE 10 ADVANTAGES

Complete Details and Specifications Sent on Request

Master Kraftile
Terra Cotta Wall Units
Ceramic Facings
Special Shapes
Swimming Pool Overflow Hand Rails
Swimming Pool Ladder Steps
Enameled Brick
Bathroom Accessories
Cutting Machines

MURRAY TILE COMPANY

INCORPORATED

Manufacturers of Roofing, Quarry and Promenade Tile

CLOVERPORT, KENTUCKY

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DALLAS, TEX., R. M. Jacks, 611 Construction Bldg.
DETROIT, MICH., C. F. Beckwith, 14264 Coyle Ave.
INDEPENDENCE, MO., E. C. Lefman, P. O. Box 13, 11521 Winner Rd.
LOS ANGELES, CAL., Cambridge Tile Mfg. Co., 910 N. Orange Dr.
MIAMI, FLA., H. J. Pilliod, 101 N.E. 25th St.
NEW YORK, N. Y., Wm. H. Revis, Inc., 103 Park Ave. Bldg.
PHILADELPHIA, PA., Wm. O. Engelke, 430 E. Phil-Ellena St.
PITTSBURGH, PA., C. A. Heckman, 4010 Dalewood Ave.
SAN FRANCISCO, CAL., Cambridge Tile Mfg. Co., 1155 Harrison St.

PRODUCTS

QUARRY TILE and Necessary Trim for Floors, Wainscots, Stair Treads and Risers, Thresholds, Window Stools and Plinths.

HEAVY DUTY QUARRIES for Packing Houses, Dairies, etc.

ROOFING TILE: Spanish Roll, Mission, and Flat Slab Shingles in various types and textures.

For Roofing see File Index.

MURTICO QUARRY TILES

For over thirty years a standard of quality, Murtico tiles are made from mixtures of the finest shale, expertly blended for color harmony. Though the texture and tones are restful and soft in appearance, the body is extremely dense and thoroughly hard burned so as to withstand heavy traffic and hard wear. Furnished in solid shades of buff, gray, licorice brown, English Red, Tuscan red, and black. Also in pleasing blends of fire tinted shades from light buff into warm shades of biscuit tans, light and dark tan, soft toned fireflashed reds and into deep browns, bluish purple and gunmetal hues.

Though made primarily for artistic effects, the hard vitreous body and smooth surface make MURTICO QUARRIES ideal for floors and wainscots in hospitals, dairies, schools, and other institutions where sanitation and long wear are essential, as well as for residential work.

Samples and catalogs sent cheerfully upon request.

It is necessary that experienced workers be used for all installations to secure the most complete satisfaction. Therefore, MURTICO QUARRY TILES are marketed only through responsible tile contractors. The nearest responsible contractor can furnish samples and estimates of cost, or we will be pleased to submit samples direct and have quotations furnished when requested.

DESCRIPTION OF COLORS

Golden Glow—Variegated blends of light buff, tan, orange and brown in many degrees of shading.

Brown Blend—Variegated shades of dark tan, reddish brown, seal brown and olive brown.

Sunburst—Variegated red, brown and gunmetal shades with variation in blend on each individual tile.

Licorice Brown—A very dark rich brown, which closely approaches black.

English Red—An attractive, vivid, cherry red, bright and stimulating.

Buff—A soft creamy color with slight variation in shade.

Tuscan Red—This color is deep and lustrous, darker than English Red and with a reddish-brown tone.

Gray—Soft light tones with sufficient variations to prevent monotony.

TILE SIZES

1¾″x1¾″x½″
1¾″x4″x½″
3″x3″x½″
3″x6″x½″
4″x4″x½″
1″x1″x¾″
1¾″x1¾″x¾″
1¾″x4″x¾″
2¾″x2¾″x¾″
2¾″x6″x¾″
4″x4″x¾″
4″x8″x¾″
4½″x6″x¾″
6″x6″x¾″
6″x9″x¾″
8″x8″x¾″
9″x9″x⅞″
5¾″x5¾″x1″
5¾″x12″x1″
12″x12″x1″
4″x8¼″x¾″ Elongated, Hexagons and Halves
6″ Hexagons and Halves
9″ Hexagons and Halves
2¼″x8″x¾″ Brickettes
4″x8″x1⅜″ Heavy Duty Packing House Quarry

Cove Base—2⅜″ high over all, 6″ wide; 4¾″ high over all, 4″ wide; 4¾″ high over all, 6″ high over all, 6″ wide; 6″ high over all, 9″ wide. All sizes in Round Top No. 94 and Square Top No. 97.

Cove Base Angles and Stops—Internal and External in various heights and widths—¾″ and 2¼″ radius.

Bullnose—Same sizes as square and oblong plain tile—all sizes No. 88.

Stair Tread—No. 40, 6″x6″x1¼″; No. 49, 6″x12″x1¼″, 12″ nosing; No. 50, 6″x12″x1¼″, 6″ nosing; No. 101, 9″x10¼″x1¼″.

Stair Tread Corners—No. 41, 6″x6″x1¼″; No. 51, 6″x12″x1¼″.

Stair Risers—No. 104, 9″x6¼″x1¼″.

Thresholds—No. 105, 6″x5″x1⅛″x1¼″.

Window Stools—No. 106, 4¼″x6″x1½″.

Window Stool Return—No. 106X, 4¼″x6″x1½″.

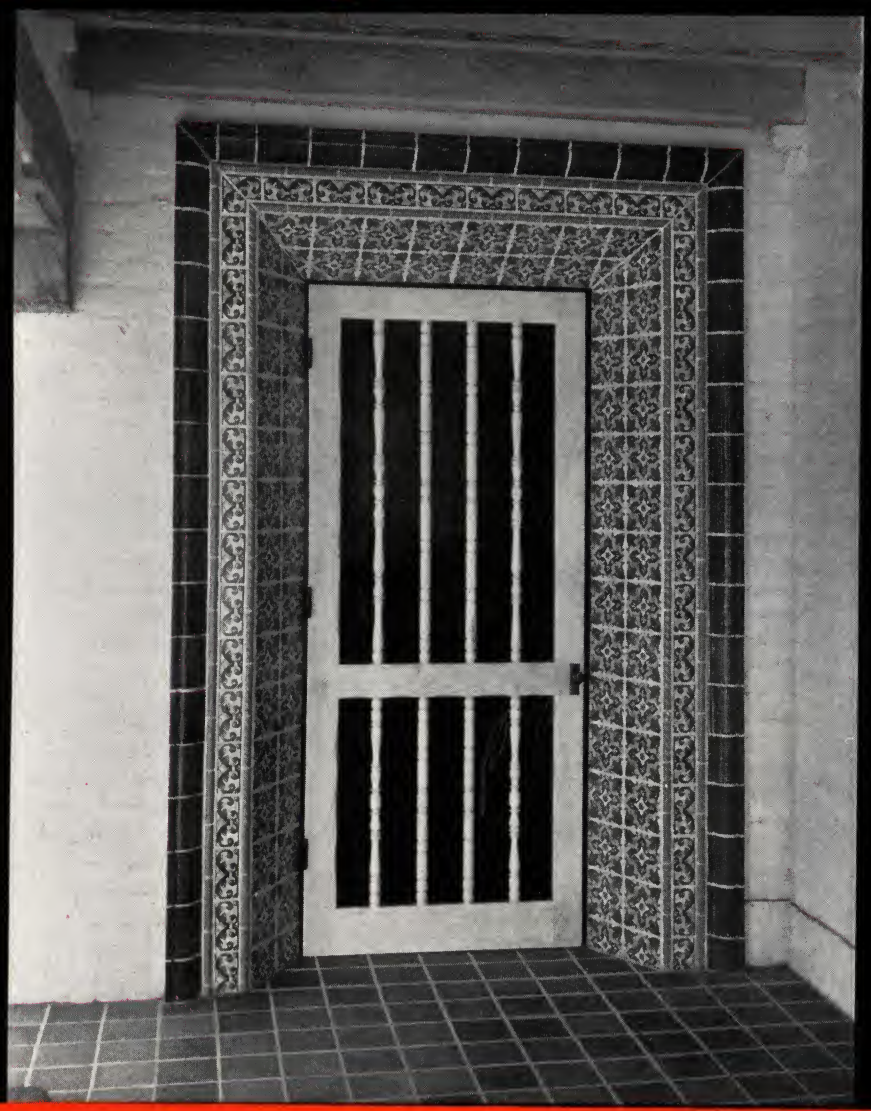
Wainscot Cap—No. 133, 2″x6″; No. 98, 4½″x6″.

Wainscot Cap Angles and Stops—Internal and External in various heights and widths—¾″ and 2¼″ radius.

Wainscot Angles and Stops—Internal and External in various heights and widths—¾″ and 2¼″ radius.

Plinth Blocks—No. 93, 6″x5½″ Beveled; No. 93-X, 6″x4½″ Flat.

HANDBOOK OF *Clay Tile*



MOSAIC

THE MOSAIC TILE COMPANY
ZANESVILLE • OHIO

•

THE CARLYLE TILE COMPANY • IRONTON, OHIO

Catalog No. 104

MOSAIC PRODUCTS . . . DESCRIPTION . . . INDEX

Real Clay Tiles for All Architectural and Decorative Purposes

Mosaic Products include all regular sizes and types of FLOOR and WALL TILES, decorative FAIENCE and BATHROOM ACCESSORIES, also CARLYLE QUARRY TILES.

FAIENCE — Glazed Plastic Made — Hand Crafted ½ to 1½ in. Thick

MOSAIC FAIENCE is plastic made, produced in a broad selection of distinctive related glazes reproduced on Pages 4 and 5. It is suitable for floors and walls, both exterior and interior, and permits the development of unusual decorative treatments. All regular sizes made and special sizes as required.

FAIENCE MOSAICS are of the same plastic made body and produced in all the Faience glazes. They are mounted in sizes 2 x 2, 2 x 1, 1 x 1 and 2" Pentagons.

WALL TILE — Glazed — Dust Pressed — Non-Vitreous 3/8 to ½ in. Thick

MOSAIC WALL TILE includes both the Satin Finish Matt glazes and the Mozane Bright Enamel Colors which are a recent development in this field. Cushion edge or square edge available.

SATIN FINISH MATT WALL TILE glazes are pastel colors, free from glare and having pleasing variation. A complete selection of Trim Tile is available (Page 13).

MOZANE BRIGHT ENAMELS offer a broad range of cheerful colors, easily cleaned and highly serviceable. As is also the case with Satin Matt Wall Tile, this material is suitable only for interior wall use.

A large selection of 6 x 1 and 6 x ½ in. decorated wall borders is provided to harmonize with the wall tile colors. These are reproduced on Page 14.

MURATILE — newly developed decorated wall tile, offers panels, borders, inserts. Illustrated on Page 15.

WALL TILE TRIMS

Bisque body wall tile glazed trim units are provided in a complete selection of sizes and shapes with angles. Illustrated on Page 13.

"ALL-TILE" BATHROOM ACCESSORIES

This complete line includes such fixtures as Towel Bars, Soap Dishes, etc., furnished in White Glaze and in all Satin Matt, Mozane Enamel and Faience Colors.

GLINT TILE — Glazed — Dust Pressed — Semi-Vitreous ½ in. Thick

Mosaic offers glazed red body GLINT along with Vitromat and Faience as suitable, artistic and durable material for exterior business house installations. Illustrated on Page 22.

FLOOR TILE — Other Than Faience or Faience Mosaics

CERAMIC MOSAIC — Unglazed — Dust Pressed — Vitreous and Semi-Vitreous — ¼ in. thick.

The term "Ceramic Mosaic" designates small dust pressed tiles in sizes up to $2\frac{3}{16}$" squares mounted on paper in sheets approximately two square feet in area. Colors as reproduced on Page 18 include the porcelain type plain colors and VELVETEX stippled colors, also GRANITEX natural clay type.

CARBORUNDUM NON-SLIP is a specially developed floor tile containing abrasive aggregate silicon carbide and produced in the popular ceramic Mosaic sizes and larger tread tiles and Flint floor tile sizes. Colors are White, Gray, Green, Granitex, Tan and Buff, Black and Red.

OHIO FLINT — Unglazed Dust Pressed — Vitreous and Semi-Vitreous — ½ to ⅝ in. thick.

Mosaic Ohio Flint Floor Tile and trim embraces an extensive selection of sizes and colors. The lighter colors, such as White, Grays, Greens, Blues and Buff, are thoroughly vitrified, having no absorption, while the darker smooth colors and Granitex textures are slightly semi-vitreous but still very hard and durable. It is available in all the unglazed colors illustrated on Page 18, also in the carborundum colors.

IRONSTONE and BLUESTONE — Unglazed — Plastic hand made — Vitrified — ¼ to 1½ in. thick.

Being plastic made this floor tile offers a pleasing variation of red and blue tones. It is unusually hard and durable and has pronounced non-slip properties. Sizes are the small mounted mosaics 2 x 2, 2 x 1, 1 x 1 and 2" Pentagons and larger and thicker Faience sizes and shapes.

VITROMAT — Glazed — Dust Pressed — Vitreous and Non-Vitreous — ½ in. thick.

This material provides durable glazed floor tile in all of the Satin Matt Glazes. Sizes are 2", 3" and 4¼" Hexagons, 3" and 4¼" Octagons, 3 x 3 and 4¼ x 4¼ produced with White Vitreous Body or Red or Buff non-vitreous body.

QUARRY TILE — Machine Made Plastic

Carlyle Quarries embrace a complete line of colors, shapes and sizes of the established Carlyle quality.

ARCHITECTURAL DESIGNING SERVICE

The Design Departments in our home and branch offices are familiar with architects' requirements, and will prepare color sketches and suggestions for effective tile treatments. This service is freely and gladly rendered. We are equipped to interpret faithfully the architects' designs and ideas.

SECURING GOOD INSTALLATIONS

MOSAIC TILES are distributed through and installed by reliable tile contractors throughout the country, including leading firms in the trade. Knowing that the selection of a good tile contractor is important, we will gladly furnish, if desired, names of those who are properly qualified.

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TO SPECIFY MOSAIC TILES

Architects who want to make sure that MOSAIC TILES are used, should include in their specifications — "Tile work shall be of Mosaic Tiles standard quality manufactured by The Mosaic Tile Company of Zanesville, Ohio." Also ask for a Certificate of Quality. We also suggest the approved short form Specification of the Tile Manufacturers Association.

Illustration on Cover is the Entrance of Administration Building, Ottawa Memorial Park Cemetery, Toledo, Ohio. Architect, W. D. Holtzman.

The door treatment is of Hispania Decorated Faience with Faience beads and moulded trim. The floor tile is Plastic Hand-made Bluestone.

THE MOSAIC TILE COMPANY

Factory and Main Office . . . Zanesville, Ohio

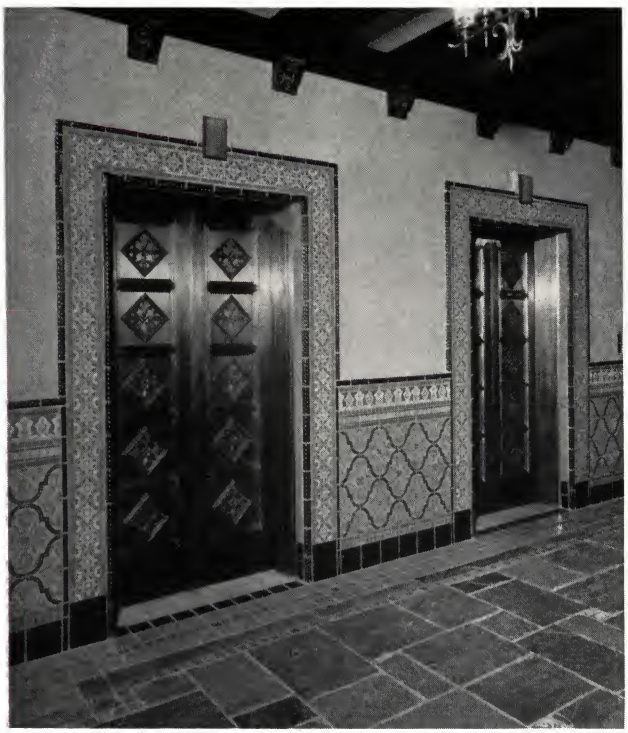
Plant No. 2, Matawan, N. J. **Quarry Plant: The Carlyle Tile Company, Ironton, Ohio**

Branch Offices and Showrooms (See Back Cover)

MEMBER, TILE MANUFACTURERS ASSOCIATION

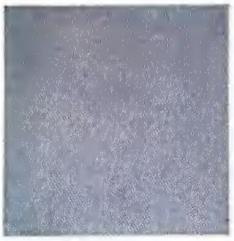
HEDRICH-BLESSING PHOTO

FAIENCE FLOOR of nine inch Hexagon irregular surface tiles in rich Blue Matt Glaze.
The character of this material produces a beautiful installation in keeping with fine interiors.
The Dole Residence, Chicago, Ill. Architect — George Connor.



An appropriate use of HAND DECORATED FAIENCE TILES in colorful Spanish design.
Lobby — School Board Administration Bldg., Philadelphia, Pa.
Architect — Irwin T. Catharine.

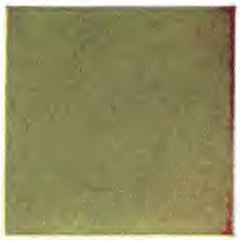
MOSAIC FAIENCE used to effectively carry out an elaborate period treatment.
Joseph T. Butler Residence, Chicago, Ill.
Architect — Charles A. Kristen.


451 Sky Blue

6008 Mesange

6005 Dewkiss Green

7051 Serpent Green


7052 Tea Green

454 Venezia Blue

6009 Huron Blue

6006 Posy Green

498 Emerald Green

7053 Lincoln Green

7050 Glacier Blue

6010 Como Blue

417 Blue Spruce

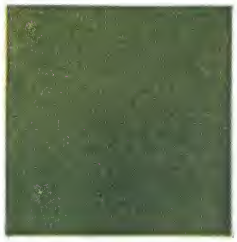
6007 Persian Green

355 Brewster Green

FAIENCE COLORS

These color charts are reproduced from actual tiles and match as closely as possible considering the texture characteristic of each glaze. Faience glazes vary from time to time so it is suggested samples be obtained for approval.

288 Apple Green


280 Monticello Green

338A Stippled Light Blue

378 Hydrangea Blue

396 Marie Antoinette

393 Naiad Green

375 Elm Green

279 Mottled Blue Grey

379 Legion Blue

397 Rose Blush

334 Mottled Warm Green

3151 Mottled Cool Green

464 Neptune

390 Ashes of Roses

291 Saraband Red

410 Ivory

7054 Flax

7058 Moth

6011 Doe

750 Shell Gray

480 Italian Straw

7055 Malacca

7059 Honeysuckle

6012 Tuscan

7061 Beaver Pelt

463F Straw

7057 Powdered Gold

7060 Maple Sugar

7056 Malay

354 Royal Black

Gold, Silver, Bronze and several other colors are not included in these charts which illustrate only a part of the complete palette of Mosaic Faience Glazes. Most all glazes can be applied on Faience shapes as well as flat tile.

FAIENCE COLORS

754 Rose Orchid

485 Shadow

286 Cream

261 Fawn

966 Burnt Orange

418 Rose Lavender

60188D Bracken Gray

278 Primrose

273 Coffee

388 Amber Yellow

5879E Taupe

402 French Gray

277 Corn

345 Chestnut

4001 Chinese Red

Above is shown an unusual residence bath of Faience Mosaics carried out in a pleasing blend of Faience colors. The walls are of two-inch squares while the circular floor is of one-inch squares specially mounted.

Small Residence
Ridgewood, N. J.

A SPECIAL FAIENCE CREATION

This authentic Altar below of special modeled Faience illustrates the unlimited scope for developing individual ideas with Mosaic Hand Made Faience. St. Mary's Church, St. Cloud, Minn.

Architect — Nairne W. Fisher.

The illustration above is of a modern entrance lobby for which Mosaic Ironstone Mosaics and Glazed Ceramics were selected. Ironstone Mosaics are unglazed plastic made tiles of proven durability.

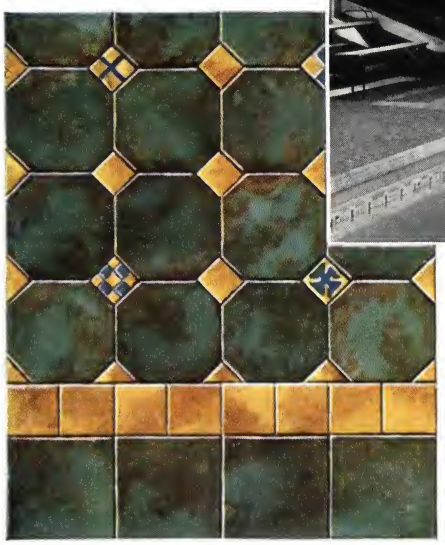
St. Louis Dairy Co.
St. Louis, Mo.
Architect — G. W. Wolf

FAIENCE FLOOR DESIGN NO. 584
(Below)

6 x 6 and 6 x 6 cut for 2 x 2
Color No. 3151
3 x 3 and 2 x 2
Color No. 316
2 x 2 Inserts
various Patterns in
Colors Nos. 316 and 347

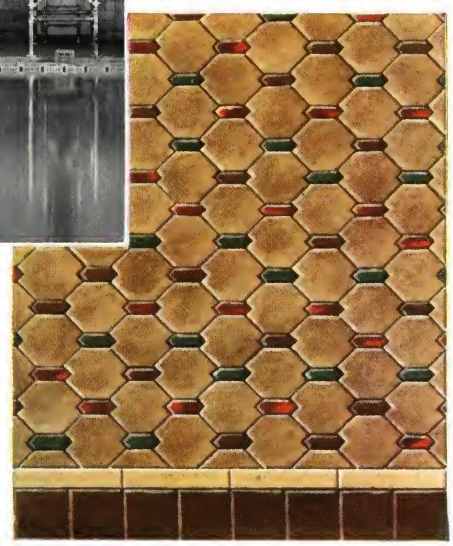
FAIENCE FLOOR DESIGN NO. 585
(Below)

3″ elongated notched Hexagon Color No. 273 with Dots in Colors Nos. 345, 464 and 4001
3 x 3 Color No. 345
6 x 1 Color No. 261



An appropriate and permanent installation incorporating glazed Faience tiles for walls and unglazed Ceramic Mosaic Tile for runway, gutter and the lining of Swimming Pool. Mosaic Products are preferred for installations of this type.

Y. M. C. A., Wilkes Barre, Pa.
Architect — T. A. Foster



The hand decorated Faience Frieze on exterior of Coliseum portion of Fort Worth Coliseum and Auditorium Project.

UNUSUAL FAIENCE JOBS OUR SPECIALTY

Illustrations on this page feature two special decorated Faience panels depicting the historical background and industrial life of Texas; an outstanding accomplishment in the field of Ceramic Art. The broad flexibility of Mosaic hand made Faience and the facilities of our Art Department make possible the development and execution of special and unusual decorative problems. We are pleased to cooperate with Architects on special propositions whether large or small, intricate or broad in composition. Further information cheerfully supplied on request.

A section of the Auditorium Frieze reproduced from actual tiles.

The picture below shows the completed project of the Coliseum and Auditorium with connecting Tower.

The Exterior Faience Frieze on each building is 120 Feet long and 7½ Feet high composed of 9 x 9 hand decorated Faience units.

Will Rogers Memorial Coliseum and Auditorium, Fort Worth, Texas. — Wyatt C. Hedrick and Elmer G. Withers, Architects.

HAND DECORATED FAIENCE INSERTS AND STRIPS

6 x 6
P. 3001
D. 8382

6 x 6
P. 3002
D. 8385

6 x 6
P. 3009
D. 8368

6 x 6
P. 3011
D. 8371

6 x 6
P. 3053
D. 8383

6 x 6
P. 3092
D. 8370

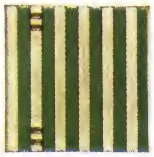
6 x 6
P. 4091
D. 8375

6 x 6
P. 5014
D. 8380

6 x 6
P. 5019
D. 8384

6 x 6
P. 5021
D. 8374

6 x 6
P 5022
D. 8373


6 x 6
P. 5024
D. 8381

6 x 6
P. 5036
D. 8372

6 x 6
P. 5040
D. 8379

4¼ x 4¼
P. 3015
D. 8359

4¼ x 4¼
P. 3017
D. 8387

4¼ x 4¼
P. 3020
D. 8357

4¼ x 4¼
P. 3028
D. 8391

4¼ x 4¼
P. 3076
D. 8389

4¼ x 4¼
P. 3077
D. 8362

4¼ x 4¼
P. 3082
D. 8354

4¼ x 4¼
P. 3093
D. 8386

4¼ x 4¼
P. 3107
D. 8390

4¼ x 4¼
P. 4310
D. 8433

4¼ x 4¼
P. 4114
D. 8356

4¼ x 4¼
P. 4115
D. 8361

4¼ x 4¼
P. 4116
D. 8360

4¼ x 4¼
P 4298
D 8366

4¼ x 4¼
P. 4302
D. 8367

4¼ x 4¼
P. 4317
D. 8396

4¼ x 4¼
P. 4327
D. 8395

4¼ x 4¼
P. 4329
D. 8392

4¼ x 4¼
P. 4332
D. 8397

4¼ x 4¼
P 4334
D. 8394

4¼ x 4¼
P. 4343
D. 8393

4¼ x 4¼
P. 4349
D. 8434

4¼ x 4¼
P. 5044
D 8355

4¼ x 4¼
P. 5046
D. 8432

4¼ x 4¼
P. 5047
D. 8365

4¼ x 4¼
P. 5045
D 8388

4¼ x 4¼
P. 5048B
D. 8358

3 x 3
P. 3030
D. 8335

3 x 3
P. 3031
D. 8350

3 x 3
P. 3032
D. 8334

3 x 3
P. 3033
D. 8349

3 x 3
P. 3034
D 8341

3 x 3
P. 3038
D. 8338

3 x 3
P. 3039
D. 8346

3 x 3
P. 3041
D. 8339

3 x 3
P. 3042
D. 8345

3 x 3
P. 3043
D. 8336

3 x 3
P. 3056
D. 8344

3 x 3
P. 3081
D. 8340

3 x 3
P. 4018
D. 8351

3 x 3
P. 4020
D. 8352

3 x 3
P 4033
D. 8347

3 x 3
P 4034
D 8348

3 x 3
P. 4051
D. 8353

3 x 3
P 4093
D. 8342

3 x 3
P. 4150
D. 8337

3 x 3
P. 4154
D. 8343

2 x 2
P. 3045
D. 8324

2 x 2
P. 3046
D. 8332

2 x 2
P. 3047
D. 8329

2 x 2
P. 3047
D. 8328

2 x 2
P. 3048
D 8331

2 x 2
P 3048
D. 8325

2 x 2
P. 3049
D. 8333

2 x 2
P. 3184
D. 8330

2 x 2
P. 3185
D. 8326

2 x 2
P. 3205
D. 8327

6 x 3
P. 3050
D. 8399

6 x 3
P. 3090
D 8400

6 x 3
P 3094
D. 8404

6 x 3
P. 3100
D. 8398

6 x 3
P 3103
D. 8401

6 x 3
P. 3108
D. 8403

6 x 3
P. 4192A&B
D. 8402

6 x 2
P. 3091
D. 8411

6 x 2
P. 3183
D 8408

6 x 2
P. 3258
D 8406

6 x 2
P 3258
D. 8410

6 x 2
P 3259
D. 8407

6 x 2
P. 4210
D. 8409

6 x 2
P. 4225
D. 8405

6 x 1½
P. 3102
D. 8414

6 x 1½
P. 4054
D. 8413

6 x 1½
P. 4075
D. 8412

6 x 1½
P. 4080
D. 8415

6 x 1¼
P 3101
D. 8422

6 x 1¼
P. 4023
D 8417

6 x 1¼
P. 4028
D. 8421

6 x 1¼
P. 4038
D. 8418

6 x 1¼
P 4058
D. 8419

6 x 1¼
P. 5005
D. 8420

6 x 1¼
P. 5006
D. 8423

6 x 1¼
P 5007
D 8416

6 x 1¼
P 5008
D. 8424

6 x 1
P 3137
D 8426

6 x 1
P. 4126
D. 8427

6 x 1
P. 4140
D 8430

6 x 1
P 5002
D 8429

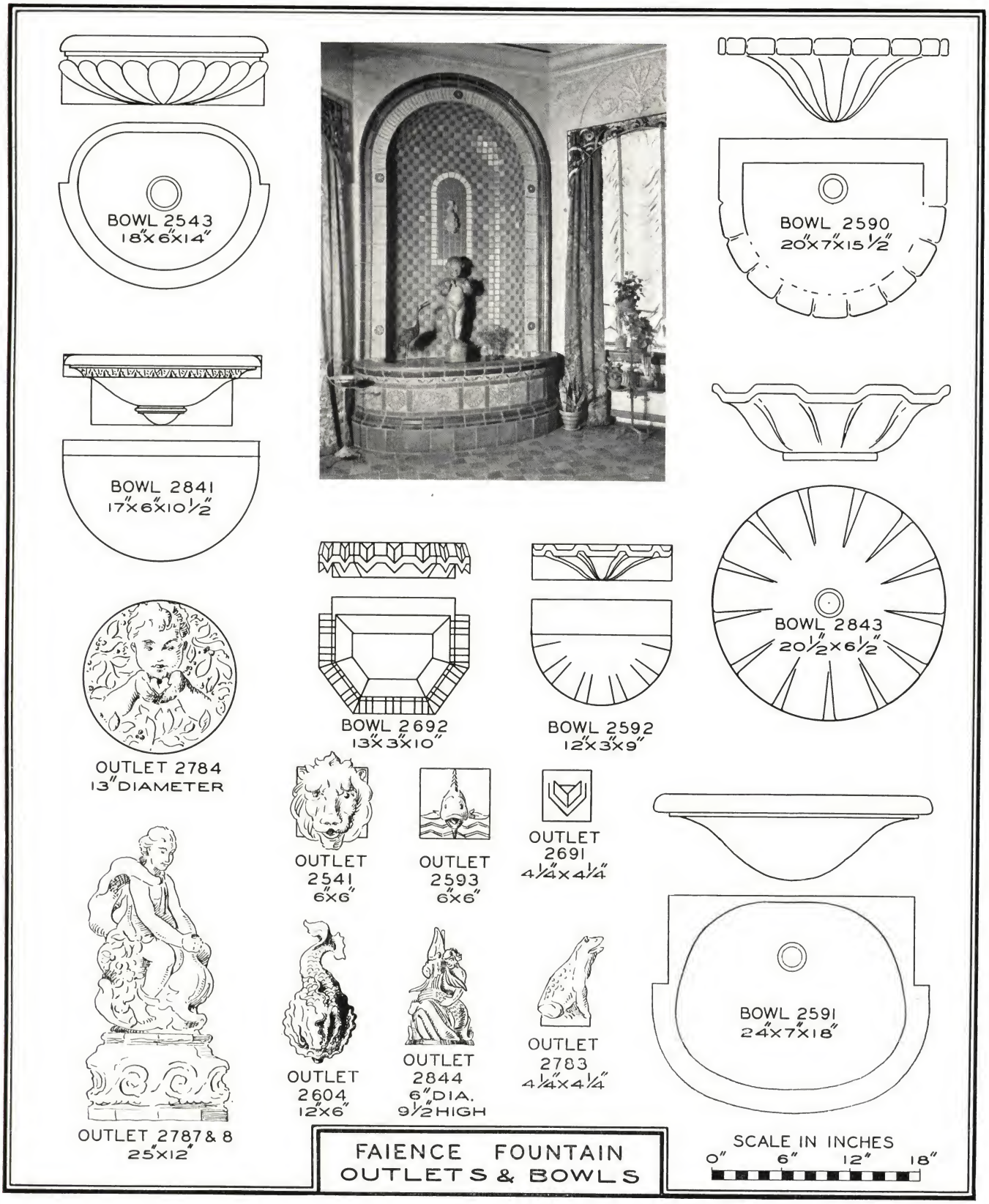
6 x 1
P. 5010
D. 8428

6 x 1
P 5025
D 8431

6 x 1
P 5026
D 8425

6 x 1
P 5027
D. 8431

FAIENCE FOUNTAIN BOWLS AND OUTLETS — The Bowls and Outlets illustrated on this page represent the most popular items in the Mosaic Faience Line. All regular faience glazes can be applied. Special designs requiring special models and moulds can be developed for unusual requirements. The photograph is of a specially designed faience fountain employing Dolphin Outlet 2604.



MOSAIC SATIN MATT WALL TILE — Our popular Satin Matt Wall Tile colors are reproduced below. The reproduction was made from the tile and is fairly accurate, but a limited shade variation is to be expected. Satin Matt Glazes have a pleasing glare-free texture and are applied on a highly refined dust pressed non-vitreous body. This material is not practical for exterior use. Regular sizes, square edge or cushion face, are: 4¼ x 4¼, 6 x 3, 6 x 6, 3 x 3, 4¼ x 2⅛, 3 x 9, 6 x 9, 4¼" and 3" Hexagons, 4¼" and 3" Octagons with dots.

The Bathroom illustration represents Semi-Vitromat 6 x 6 Floor Tile Matt Glaze Color 345 Indian Brown with 4¼ x 4¼ Matt Wall Tile cushion face Color 7043 Chamois, a new color not in the chart. 6 x ½ Strips are Color 345 — Muratile Border below cap Pattern No. 227 4¼ x 2 and Muratile Marine Panel No. 226.

0402 French Gray
0485 Light Orchid
0754 Rose Orchid
060188D Bracken Gray
0410 Old Ivory
0418 Rose Lavender
0341 Meadow
0463F Straw
0480 Buttercup
0454 Medium Blue
0451 Sky Blue
0338A Stippled Blue
07005 Pine Frost Green
0498 Emerald
0277 Oriental Yellow
0399 Hydrangea
0349 Peach Bloom
0398 Flesh
07028 Glaucous Green
0967 Pale Green
0443 Sea Spray
0473 Cream
07023 Light Ivory
07041 Rose Amber
0280 Jade Green
0261 Fawn
07042 Buckthorn Brown
0354 Royal Black
0490 Ox Blood
0345 Indian Brown
0404 Sienna Brown
0966 Burnt Orange
06002 Bronze

MOZANE BRIGHT ENAMEL GLAZED WALL TILE — The Chart below includes all of our popular bright enamel glazes except our newly developed Swan White No. 6028. These colors are now applied on an improved white bisque body, a factor in the fine quality and durability of this material.

Available in square edge or cushion face in sizes 4¼ x 4¼, 6 x 3, 6 x 6, 4¼ x 2⅛, 9 x 6, 4¼" Hexagons, 3" Hexagons, 4¼" Octagons, and 3" Octagons with dots.

J213 Blossom Pink

J224 Persian Rose

J216 Indian Ivory

J220 Aqua Marine

J159 Oriental Blue

J147 Azure

J196 Nile Green

J6507 Butternut

J217 Peach Biege

J195 Light Orchid

J197 Canary

0211 Ming Green

J162 Fern Green

J6500 Oatmeal

J156 Pink

J200 Morning Glory

J215 Royal Ivory

J167 Seacrest Green

J158 Moss Green

J144 Dove Gray

J139 Dusk Gray

J40-4 Rose Tan

J218 Jonquil Yellow

J199 Peruvian Brown

J219 Yale Blue

J223 Burmese Red

0212 Citrus Yellow

The illustration above shows a modern kitchen with wainscot of bright, cheerful Mozane Enamel Wall tile. An unglazed Ceramic floor design is used for beauty and durability.

Features of special interest are the tiled drain boards and the Muratile decorated inserts.

HEDRICH-BLESSING STUDIO

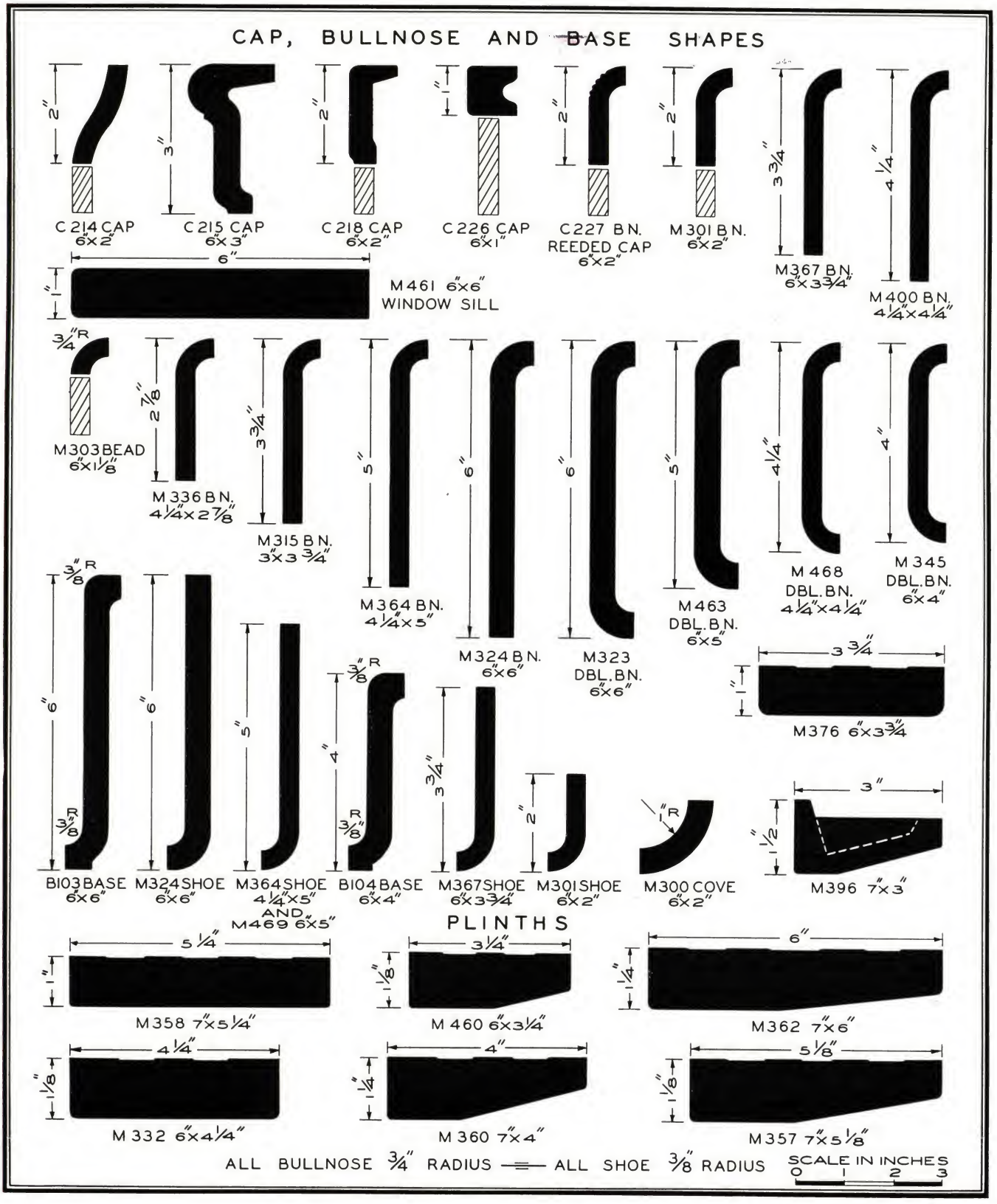
TEA ROOM OF AN S. S. KRESGE CO. STORE — CHICAGO

The wainscot, counter front and back bar of this attractive installation are of Mosaic Satin Matt and Mozane Enamel Wall Tile. Interior treatments for stores, restaurants, and the like can be developed in a broad variety of color combinations. Low maintenance cost and long life are proven qualifications of Mosaic Products.

Mozane Bright Enamel Wall Tile in this bath combines beauty and durability. A distinctive decorative feature is the Faience Panel in tub alcove.
Albert J. Pixley Residence, River Forest, Ill.
F. O. DeMoney — Architect.

A striking example of the flexibility of Mosaic Products. Mozane Enamel Wall Tile, Inlaid Decorated Borders, Faience Inserts are effectively combined. The hand decorated panels cleverly call attention to the different foods on display.
One of the Hamady Grocery Stores — Flint, Michigan.

WALL TRIM CHART — illustrating in cross section all of the various caps, bases, etc., available for use with Mosaic Matt and Enamel Glazed Wall Tile. Colors shown on pages 10 and 11 are applied on these trim shapes. All regular angles furnished. These trim tiles are generally square edge for use with either Cushion Edge or Square Edge Wall Tile. Cushion Edge Trim supplied only for combination corners and Bullnose Cap and Shoe.



The STRIPS or WALL BORDERS below are reproduced from actual tiles. All Matt and Enamel Glazes can be applied on the Inlaid and Muratile Strips. The Mozane Decal Strips are available with Black Decoration on wall tile colors except Patterns No. 11 and No. 12 which can also be had in Green as illustrated.

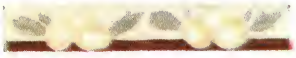
The letter "P" under each strip designates the Pattern and "D" the decoration.

INLAY DECORATED STRIPS

6 x 1 P. 76 D. AA

6 x 1 P. 77 D. AE

6 x 1 P. 78 D. AJ

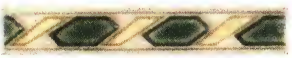

6 x 1 P. 81 D. AN

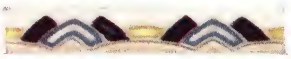
6 x 1 P. 76 D. AB

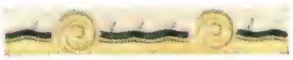
6 x 1 P. 77 D. AF

6 x 1 P. 80 D. AK

6 x 1 P. 81 D. AP


6 x 1 P. 77 D. AC

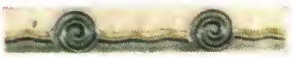

6 x 1 P. 78 D. AG


6 x 1 P. 80 D. AL

6 x 1 P. 81 D. AQ

6 x 1 P. 77 D. AD

6 x 1 P. 78 D. AH


6 x 1 P. 80 D. AM

6 x 1 P. 82 D. AR

6 x ½ P. 83 D. 1

6 x ½ P. 84 D. 60

6 x ½ P. 86 D. 4

6 x ½ P. 87 D. 72

6 x ½ P. 83 D.. 5

6 x ½ P. 85 D. 1

6 x ½ P. 86 D. 8

6 x ½ P. 88 D. 1

6 x ½ P. 83 D. 8

6 x ½ P. 85 D. 5

6 x ½ P. 86 D. 21

6 x ½ P. 88 D. 5

6 x ½ P. 83 D. 65

6 x ½ P. 85 D. 16

6 x ½ P. 87 D. 1

6 x ½ P. 88 D. 10

6 x ½ P. 84 D. 16

6 x ½ P. 85 D. 65

6 x ½ P. 87 D. 54

6 x ½ P. 88 D. 22

6 x ½ P. 84 D. 22

6 x ½ P. 86 D. 1

6 x ½ P. 87 D. 64

6 x ½ P. 88 D. 60

MOZANE DECORATED STRIPS

6 x ½ P. 10 D. 1

6 x ½ P. 12 D. 3

6 x ½ P. 13 D. 8

6 x ½ P. 15 D. 13

6 x ½ P. 11 D. 3

6 x ½ P. 12 D. 6

6 x ½ P. 14 D. 11

6 x ½ P. 16 D. 11

6 x 1 P. 18 D. 1

6 x 1 P. 20 D. 5

6 x 1 P. 22 D. 9

6 x 1 P. 24 D. 8

6 x 1 P. 19 D. 10

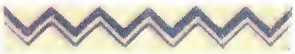
6 x 1 P. 21 D. 8

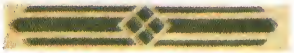
6 x 1 P. 23 D. 32

6 x 1 P. 25 D. 11

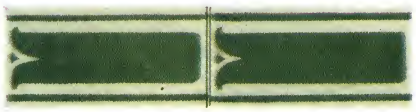
MURATILE DECORATED STRIPS

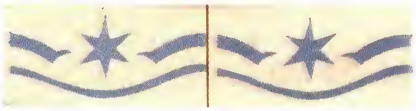
6 x 1 P. 134 D. A2


6 x 1 P. 146 D. B5


6 x 1 P. 217 D. T2

6 x 1 P. 147 D. A8


4¼ x 2 P. 188 D. E2

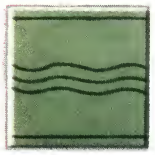

4¼ x 2 P. 227 D. A5

4¼ x 2 P. 240 D. G8

Patt. 100
Dec. A50

Patt. 105
Dec. G35

Patt. 111
Dec. A6


Patt. 117
Dec. F2

MURATILE PANELS AND INSERTS — Our new Muratile Silk Screen Process of decorating wall tile makes possible the production of all designs on this page in various colors applied on the regular Matt and Enamel Wall Tile Glazes. The Bathroom above illustrates an effective application of the Sea Gull and Wave Design, Panel No. 236 Dec. 88.

Patt. 229
Dec. A29

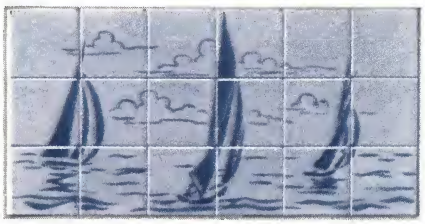
Patt. 230
Dec. C29

Patt. 231
Dec. G29

Patt. 234
Dec. F29

Patt. 120
Dec. G2

Patt. 136
Dec. B5


Panel 196 Dec. V5

Patt. 237
Dec. U44

Patt. 238
Dec. A49

Patt. 121
Dec. U51

Patt. 124
Dec. D29

Panel 226 Dec. A3

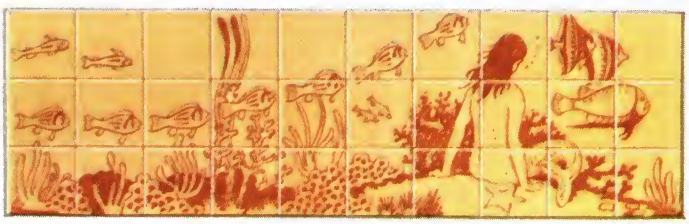
Panel 193 Dec. E2

Panel 242 Dec. E47

Patt. 239
Dec. A54

Patt. 241
Dec. A28

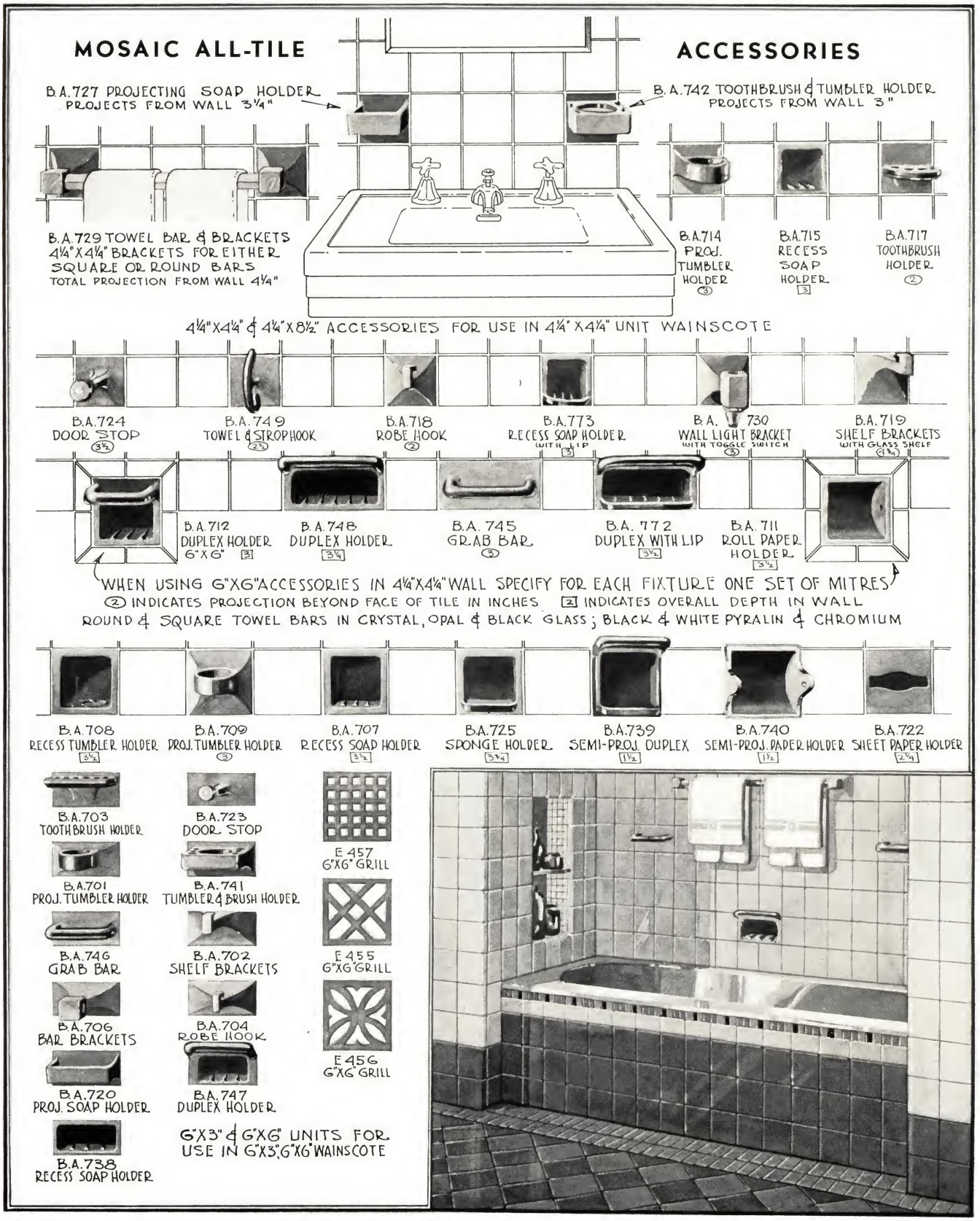
Patt. 219 Dec. A5


Panel 224 Dec. G8

Patt. 106 Dec. C3

MOSAIC ALL-TILE BATHROOM ACCESSORIES have the same body as Mosaic wall tiles and are furnished in the same glazes, thus eliminating uncertainty in matching the surrounding wall.

Most of the popular items, providing for every requirement, are illustrated below. Sizes are the regular tile sizes, enabling them to fit into the jointing of the tile wall. Several dowel and flange type fixtures are also provided. An Accessory Catalog is available on request.



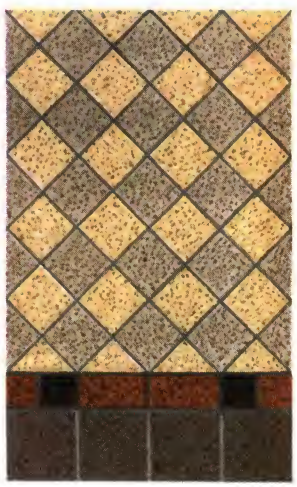
GRANITEX Floor Tile selected for its durability and safety. One of the Laboratory Spaces, Mellon Institute, Pittsburgh, Pa.
Architects — Jansen & Cocken.

GRANITEX and DECORATED FAIENCE combined to produce this attractive Recreation Room Floor. Follmer Residence, Columbus, Ohio.
Architects — Basset & Tresselt

Corridor Floor of 6 x 6 Plastic Made Ironstone Floor Tile in pleasing tone variation. East Liberty Presbyterian Church, Pittsburgh, Pa.
Architects — Cram & Ferguson

MOSAIC FLINT FLOOR TILES are unglazed dust pressed Vitreous and Semi-vitreous tiles, highly resistant to wear and impervious to moisture and foreign substances. This material is the highest type of floor tile, especially suitable for public buildings, corridors, operating rooms, turbine rooms, bottling rooms, stair treads and other places subjected to severe wear. Mosaic Flint is produced in the same colors as Ceramic Mosaic Tile, as reproduced on Page No. 18. Granitex and Velvetex Colors are included as well as several carborundum non-slip colors. Sizes available are 3 x 3, 6 x 3, 4¼ x 4¼, 6 x 6, 4¼ x 2⅛, 2⅛ x 2⅛, 2″, 3″, and 4¼″ Hexagons, 3″ and 4¼″ Octagons and Dots.

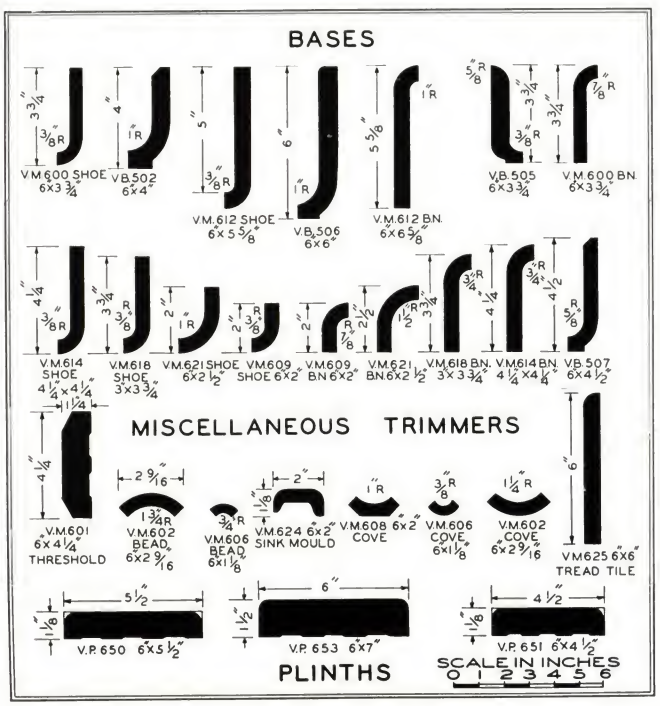
Trim tiles produced in Ohio Flint are illustrated in cross section chart below.



FLINT FLOOR DESIGN NO. 586

Field: 4¼ x 4¼ x ½ Granitex Natural Clay Type dust pressed Colors No. 1221 Tan — No. 1223 Buff.

Border: 6 x 6 Granitex Color No. 1222 Brown — 6 x 3 No. 1225 Red, 3 x 3 No. 1228 Black.



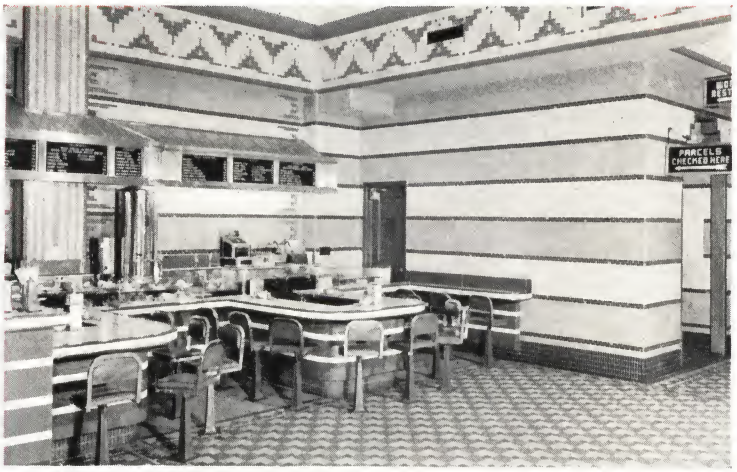
FLINT FLOOR DESIGN NO. 587

Field: 6 x 6 x 5/8″ Vitreous dust pressed Colors Gray Granite and Dark Green Velvetex No. 201.

Border: 6 x 6 Flint Color No. 201 and 3 x 3 Dark Gray Vitreous.

White

Black



Eastern Mass. Bus Terminal, Boston, Mass. Architect — George A. Cornet.

Orchid

Pink

Light Gray

Dark Gray

Pink Velvetex

Blue Velvetex

Light Blue

Dark Blue

Light Green Velvetex

Dark Green Velvetex

Cream

Buff

Salmon

Red

Chocolate

Lemon

Light Yellow

Celadon

Green

Gray Granite

CERAMIC MOSAICS unglazed mounted tiles are made in the colors reproduced on this page. The regular smooth colors above are dust pressed, vitreous and semi-vitreous. Sizes are $\frac{3}{4}$" Squares, 1", $1\frac{1}{4}$" and 2" Hexagons, $1\frac{1}{16}$ x $\frac{1}{2}$, $1\frac{9}{16}$ x $\frac{3}{4}$, $1\frac{9}{16}$ Squares, $2\frac{3}{16}$" Squares, $2\frac{3}{16}$ x $1\frac{1}{16}$, $\frac{1}{2}$" Squares, $\frac{11}{32}$" Squares, $2\frac{3}{16}$ x $1\frac{1}{16}$ Rhomboids, $1\frac{1}{16}$" diamonds and triangles, $1\frac{9}{16}$" Pentagons, $1\frac{9}{16}$" Corner-off.

Red Granite

Buff Granitex
1223

Tan Granitex
1221

Brown Granitex
1222

Black Granitex
1228

Blue Green
1227

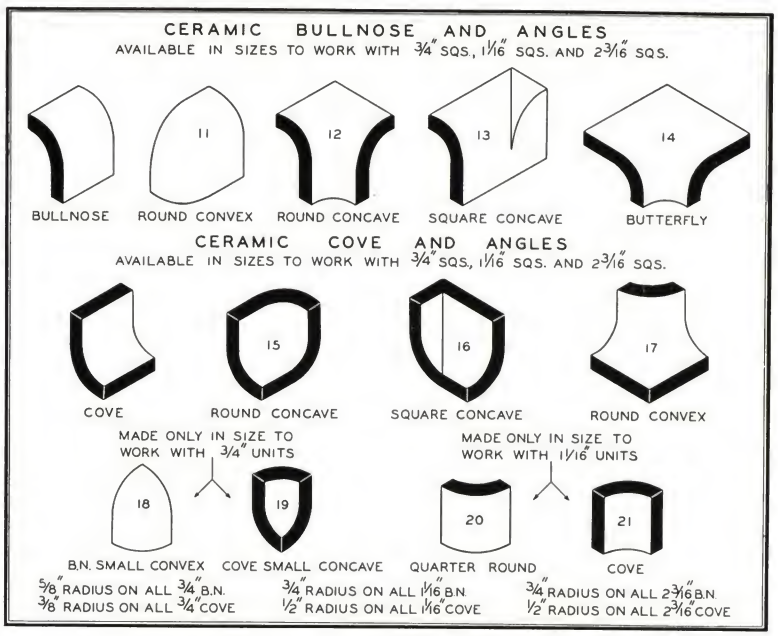
Blue Gray
1226

Red Granitex
1225

GRANITEX CERAMICS are dust pressed natural clay type, having a non-slip textured surface. They are available in sizes $2\frac{3}{16}$ x $1\frac{1}{16}$, $2\frac{3}{16}$ Pentagons, $2\frac{3}{16}$" and $1\frac{1}{16}$" Squares in colors reproduced above. Manufactured both cushion face and square edge.

MOSAIC CARBORUNDUM NON-SLIP CERAMIC MOSAICS

are very similar to the regular ceramic bodies with the addition of carborundum abrasive aggregate. It is very durable and an extremely satisfactory non-slip floor tile. Colors produced are White, Gray, Red, Green, Black, and Granitex Buff and Tan in sizes $\frac{3}{4}$", $1\frac{1}{16}$", $1\frac{9}{16}$" Squares, $1\frac{9}{16}$ x $\frac{3}{4}$ and 1" Hexagons.



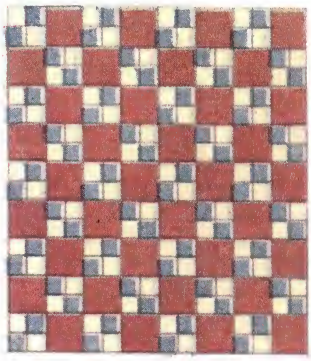
IRONSTONE AND BLUESTONE MOSAICS

This material is plastic natural clay type produced in several shades of salmon and red termed Ironstone or the pleasing blue tones — Bluestone. They are not illustrated in colors but an installation is shown at top right Page No. 6.

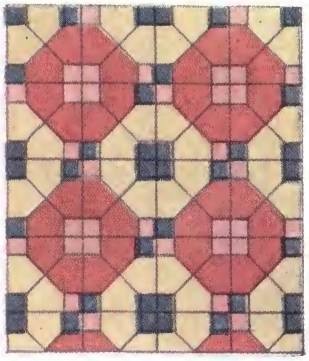
Sizes are 2 x 2, 2 x 1, 1 x 1 and 2" Pentagons.

The Ceramic Trim Chart at left illustrates the various Bullnose Cap and Cove members with their angles as produced in the ceramic colors illustrated above. Sizes $\frac{3}{4}$ x $1\frac{1}{8}$, $1\frac{1}{16}$ x $1\frac{1}{4}$, $2\frac{3}{16}$ x $1\frac{9}{16}$, and $1\frac{1}{16}$" Bead.

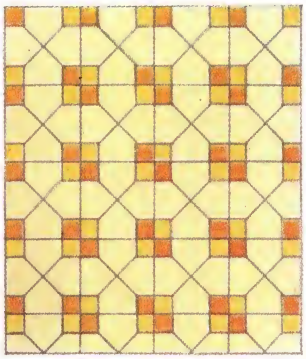
UNGLAZED CERAMIC FLOOR DESIGNS illustrated below represent a few of our popular designs, available in combinations of all the regular ceramic colors on Page No. 18. Most designs can be produced in several sizes. The $1\frac{9}{16}$ x $\frac{3}{4}$, $1\frac{9}{16}$" Squares, and $\frac{3}{4}$" squares illustrated are the most popular and practical sizes. Ceramic Mosaic floor tile provides attractive and durable floors at reasonable cost.



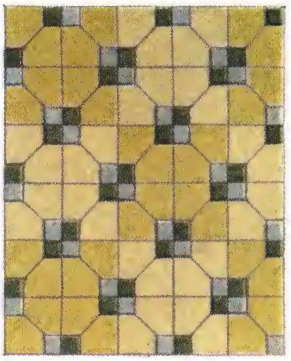
Design 2148A8
Orchid, Cream, Light Grey



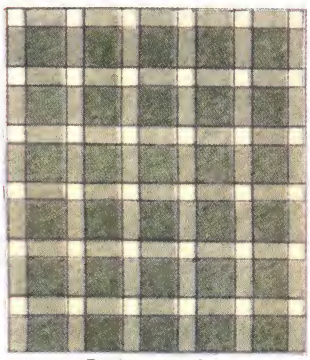
Design 2190A
Cream, Pink, 203, 205



Design 2186A
Light Yellow, Lemon, Buff

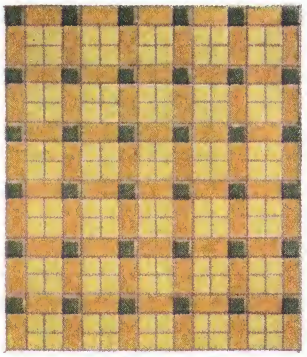


Design 2187A
Light Yellow, Lemon, 201, 202

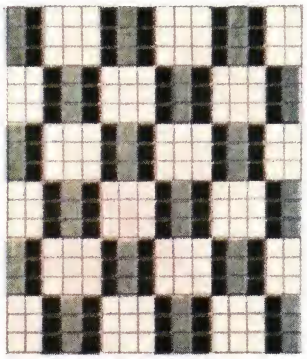


Design 1827A52
Cream, 201, 202

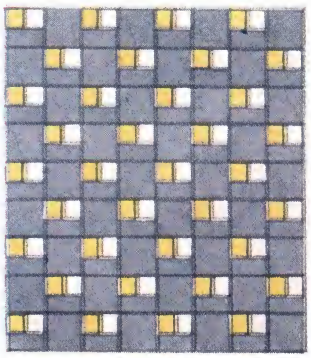
Design 1810A14
201, 202, Buff



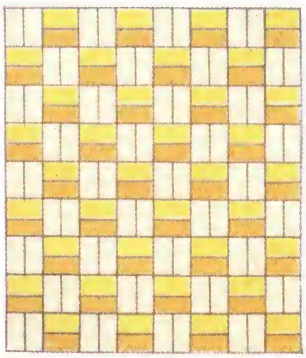
Design 2173G
Lemon, Buff, 201



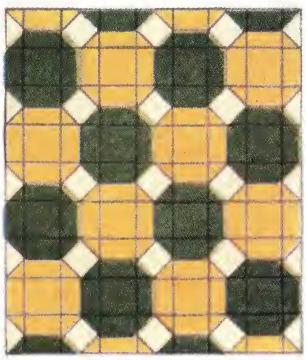
Design 2147C
Cream, Green, 201



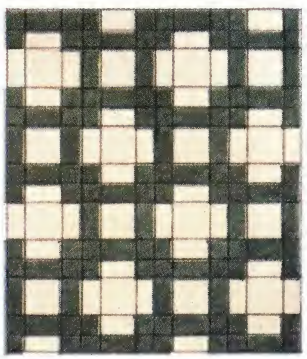
Design 2175I
203, Cream, Buff



Design 1992P
Cream, Buff, Lemon



Design 2174G
Buff, 201, Cream

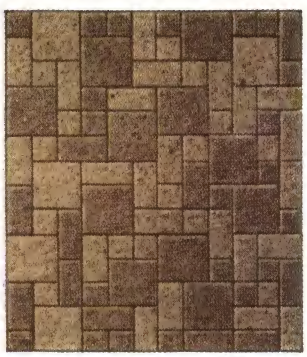


Design 1809I
Cream, 201

GRANITEX FLOORS are extremely practical... The designs illustrated below incorporate our most popular colors and regular Granitex sizes.

Design 2149P
1221, 1223, 1222

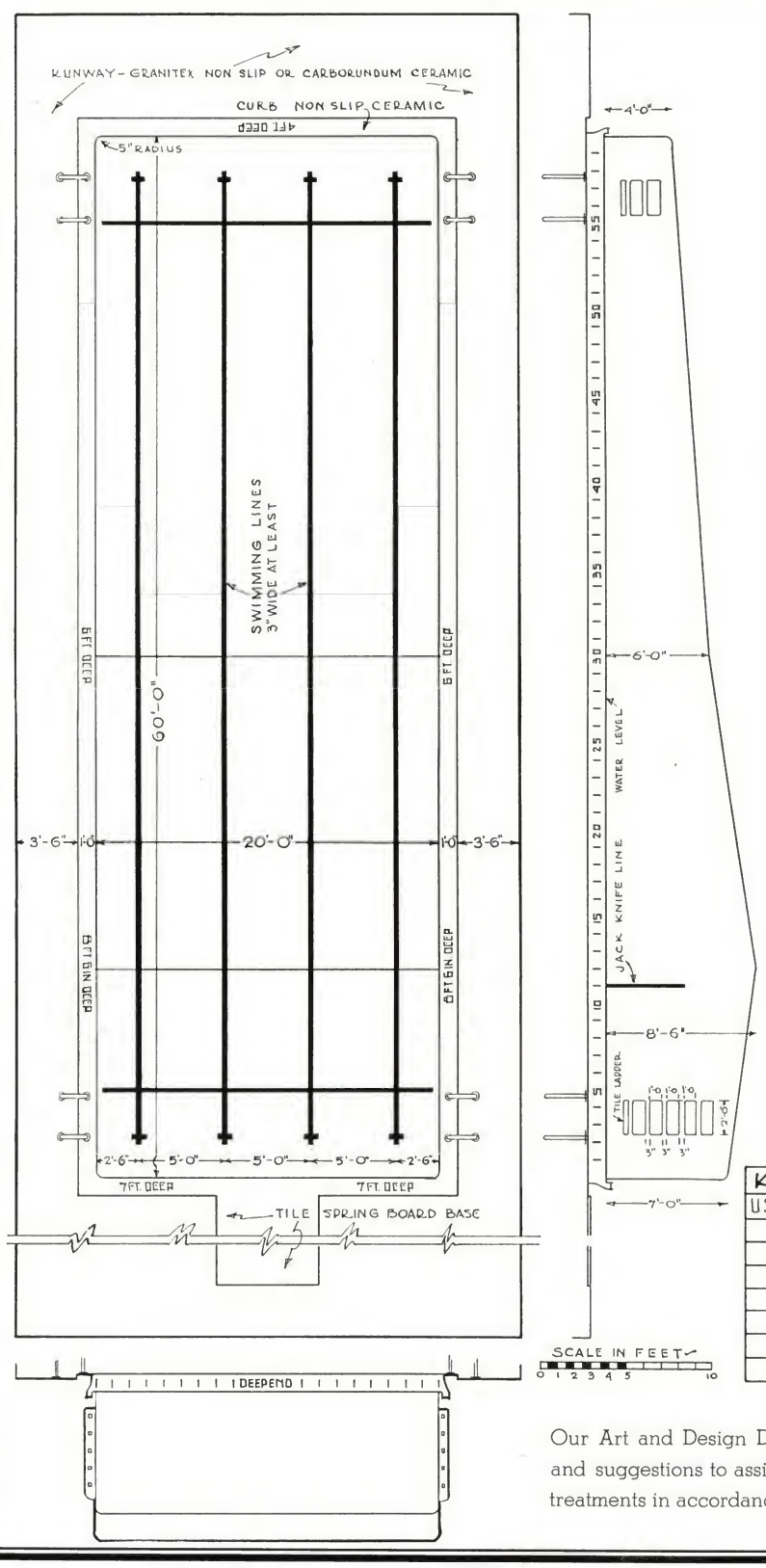
Design 1800A34
1221, 1223, 1222

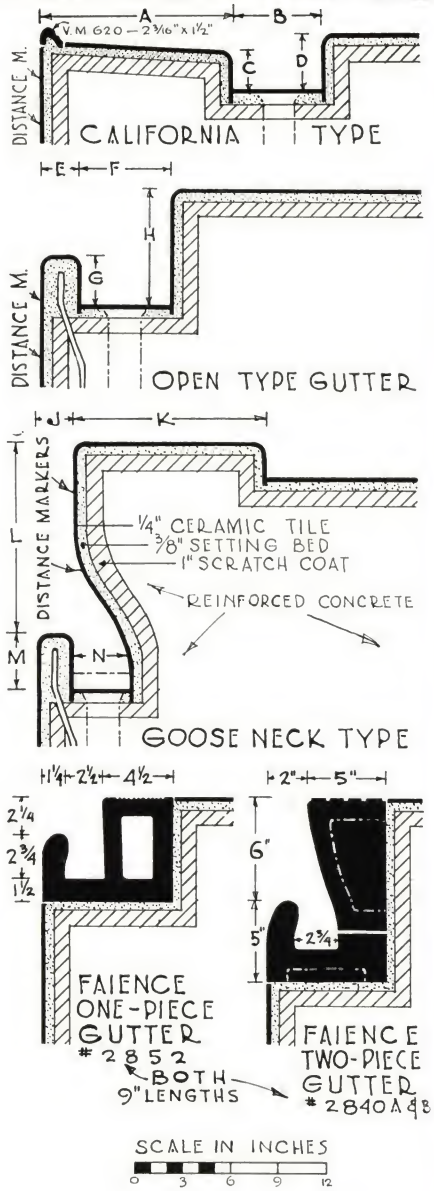


Design 1832A
1221, 1223

Design 2184C
1226, 1227, 1223, 1222

SWIMMING POOL INFORMATION — The details on this page provide information and practical suggestions for swimming pool treatments and include several popular scum gutter designs. Mosaic unglazed ceramic tile in Vitreous colors is preferred material for the lining of pools while the curb and runway around the pool should be of Granitex non-slip ceramics. Scum Gutters can be constructed of ceramic tile as illustrated or the glazed Faience Gutters can be used to simplify construction and add to the beauty of the installation.



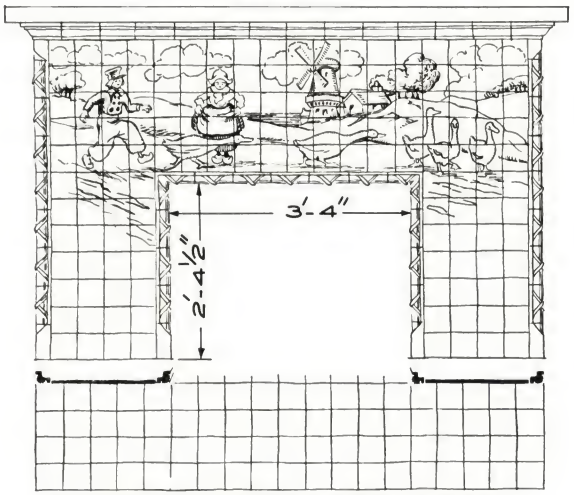


KEY TO LETTERED MEASUREMENTS					
USING UNITS	3/4" X 3/4"	1 1/16" X 1 1/16"	USING UNITS	3/8" X 3/4"	1 1/16" X 1 1/16"
A	1'-0 3/8"	0'-11 5/8"	H	0'- 7"	0'-7"
B	0'-5 5/8"	0'- 5 5/8"	J	0'-2 5/16"	0'-2 5/16"
C	0'-2 1/2"	0'-2 1/2"	K	1'-0"	0'-11 9/16"
D	0'-3 1/2"	0'-3 1/2"	L	1'-0"	X
E	0'-2 5/16"	0'-2 5/16"	M	0'-3 1/2"	X
F	0'-5 5/8"	0'-5 5/8"	N	0'-3 1/2"	X
G	0'-3"	0'-3"			

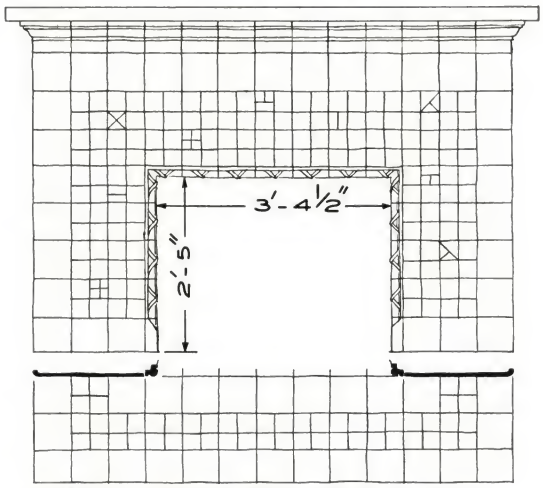
Our Art and Design Department will gladly provide layouts and suggestions to assist the architect in developing practical treatments in accordance with his ideas.

FAIENCE MANTELS AND FIRE FRAMES — Faience Mantels, Arches and Fire Frames illustrated on this page represent several popular designs and offer a selection of different types suitable for use in homes of varied architectural style. Many other mantel and fireplace arrangements can be developed and suggestions will gladly be offered for unusual treatments. Mosaic Faience, due to its vitrified body and high fired glazes, is extremely practical and durable for fireplace use.

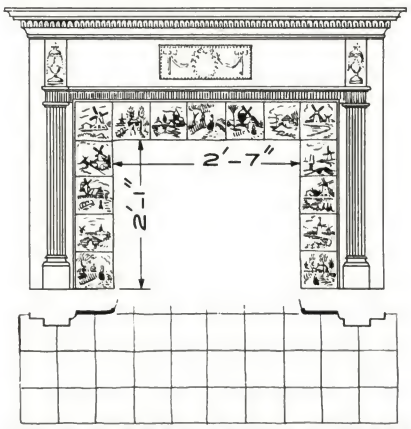
FAIENCE TILE MANTELS AND FIRE FRAMES



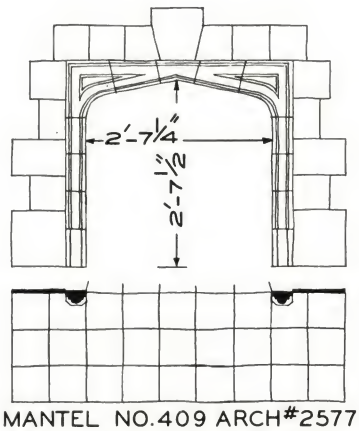
MANTEL NO. 420 AVAILABLE IN MANY COLOR COMBINATIONS USING REGULAR FAIENCE GLAZES — WOOD SHELF



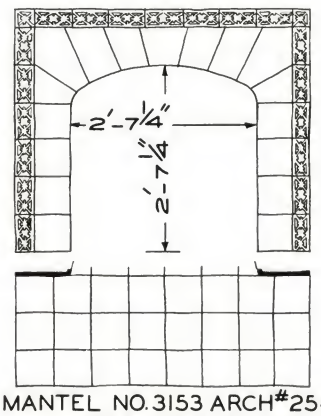
MANTEL NO. 415 AVAILABLE IN ANY REGULAR FAIENCE GLAZES WOOD SHELF



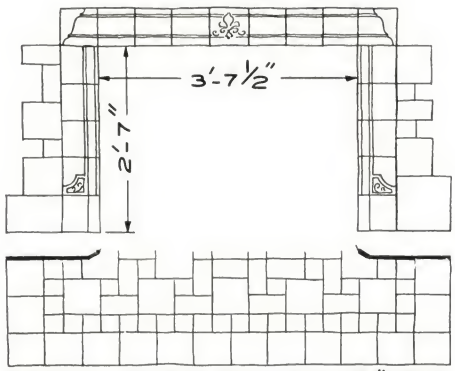
HAND PAINTED DUTCH INSERTS AS FACING FOR WOOD MANTEL



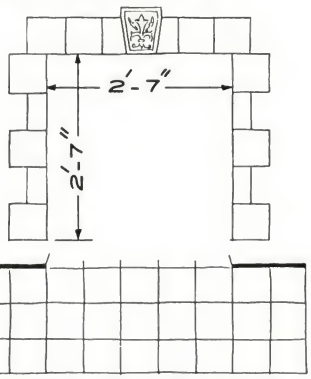
MANTEL NO. 409 ARCH #2577 AVAILABLE WITH OPENINGS 3'-1½", 3'-7½" AND 4'-2"



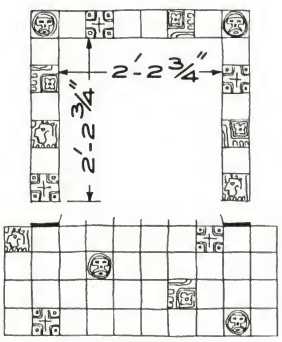
MANTEL NO. 3153 ARCH #2546 AVAILABLE WITH OPENINGS 3'-1½", 3'-7½" AND 4'-2"



MANTEL NO. 413 WITH FRAME #2722



MANTEL NO. 3145 PLAIN TILE WITH GLAZED EDGES



MANTEL NO. 3150 AZTEC INSERTS AND PLAIN TILE GLAZED EDGES

SCALE IN FEET 0 1 2 3

A modern lifetime store front with Mosaic Glint Tile Pattern No. 1002 and plain Vitromat in our new Bronze glaze No. 6002.
Armstrong Clothing Co., Cedar Rapids, Iowa.
Architect — Harry E. Hunter.

Below is illustrated a complete tile building front, striking and yet dignified in appearance. Glint Patterns 1001, 1002 and 1003 are utilized in Black enamel and Ivory. The name as shown is often decorated and fired permanently on the face of the tiles.

The Elwood Coca Cola Bottling Co.
Elwood, Indiana.

STORE FRONTS

AND BUILDING EXTERIORS

Mosaic products offer permanent durability and a broad scope for color treatment and design. There is no other material as practical for exterior use as Mosaic Faience or Semi-Vitromat Glint Tile glazed in bright Black, Gunmetal, Bronze, Moss Green, Ivory or other of our regular glazes. The correct type of Mosaic Tile properly designed and installed is definitely modern and suitable as well as superior from the standpoint of maintenance and permanence.

The illustration below demonstrates the use of Faience Mosaics in 2 x 2 size to effect a pleasing modern treatment. Our large selection of Faience glazes is available in this flexible material in sizes 2 x 2, 2 x 1 and 1 x 1.
Hi Speed Service Station, Flint, Michigan.
Architect — John Mackenzie.

GLINT TILE PATTERNS

Glint fluted designs are produced especially for Store Front use. This material has a hard red weather-proof body and is glazed in most Matt and Enamel colors.

Pattern No. 1001
Size 4¼ x 4¼ x ½

Pattern No. 1002
Size 4¼ x 4¼ x ½

Pattern No. 1003
Size 4¼ x 4¼ x ½

Glint Bullnose and Cap
Pattern No. V.M. 626
Size 4¼ x 4¼ over all

Glint Pattern No. 1000
Reeded Design
Size 6 x 4 x ½

THE CARLYLE TILE COMPANY

IRONTON, OHIO

MANUFACTURERS OF

CARLYLE QUALITY QUARRIES

Sales offices include all Mosaic Tile Company Branches as listed on back cover.

COMPOSITION AND SPECIFICATIONS

The Carlyle line of Quarry Tile includes a complete selection of standard sizes, shapes and colors for walls and floors. Carlyle Quarries are made from the highest grade shales and are impervious to moisture, stains and dirt.

The name "Quarries" is known in building trades to designate unglazed, mechanically plastic made tile, burned to vitrification and ½ to 1¼ inches thick depending on the size.

To include "Carlyle" with the above description in specifications assures dependable quality, durability and beauty at reasonable cost.

All regular Carlyle colors are illustrated on Page 25.

Floor patterns are on Page 24, and Trims on Page 27.

GRADES OF CARLYLE QUARRY TILE

Carlyle tiles are available in three grades, FOUR SQUARE, STANDARDS and SECONDS. The distinction between the three grades is indicated by the following descriptions.

FOUR SQUARE: Tiles selected four square or ground are available in the various colors and sizes for very particular work where tiles are to be installed with very small joints.

STANDARDS: These tiles are sound and solid in every particular, approximately level and regular in their lines with slight variations in lengths, widths and shades, and lay up well in floor work.

SECONDS: These are the tiles rejected from our standard grade. The imperfections consist of slightly broken corners and chipped edges. There are no cracks running into the tiles. They are not selected with care as to level surface and regular lines, or as to uniformity of color.

CARLYLE PACKING HOUSE TILE

Wherever new construction is under contemplation, in which floors possessing maximum resistance to absorption and hard wear are indicated, it is suggested that Carlyle Packing House tile be investigated.

This tile, with its ability to stand up under heavy moving loads, plus its high resistance to moisture and acids, is the ideal floor for all such installations.

For replacement of floors worn out under such service there is no better or more economical method than to resurface with Carlyle Packing House tile.

Packing House tile is 8 x 4 in size and 1½ in. thick. It is stocked in red but can be produced in other colors on order.

LOW COST DURABLE TILE FLOORS

Carlyle Quarry tiles provide unglazed permanent floors rich in color and conservative in cost. There is a broad selection of designs and colors suitable for Terraces, Porches, Entrances, Recreation Rooms, Patios, Lobbies in Public Buildings, and other spaces where floors are subjected to hard usage.

SIZES AND SHAPES

Square Tiles

- 12 x 12 x 1¼
- 5¾ x 5¾ x 1¼
- 9 x 9 x ⅞
- 8 x 8 x ⅞
- 6 x 6 x ¾
- 4 x 4 x ¾
- 4 x 4 x ½
- 2¾ x 2¾ x ¾
- 1¾ x 1¾ x ¾
- 1 x 1 x ¾

Rectangular Tiles

- 5¾ x 12 x 1¼
- 6 x 9 x ¾
- 3¾ x 8 x ¾
- 2¾ x 6 x ¾
- 1¾ x 4 x ¾
- 8 x 4 x 1½

Hexagon Tiles

- 9 inch ⅞ in. thick
- 6 inch ¾ in. thick
- 4 x 8¼ ¾ in. thick
- 8 x 2¼ 1 in. thick

Diagonal halves for all square tiles, and halves for hexagons are available to complete designs.

Special sizes of flat tile or trim can be manufactured for special installations.

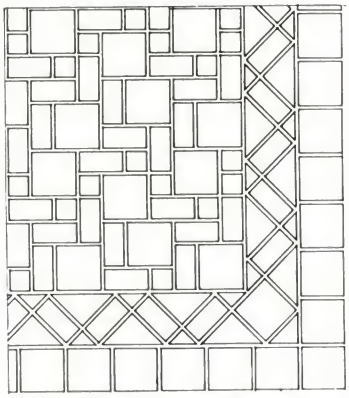
Round edge quarries in all above sizes produced on order.

MEMBER TILE MANUFACTURERS ASSOCIATION

THE CARLYLE TILE COMPANY

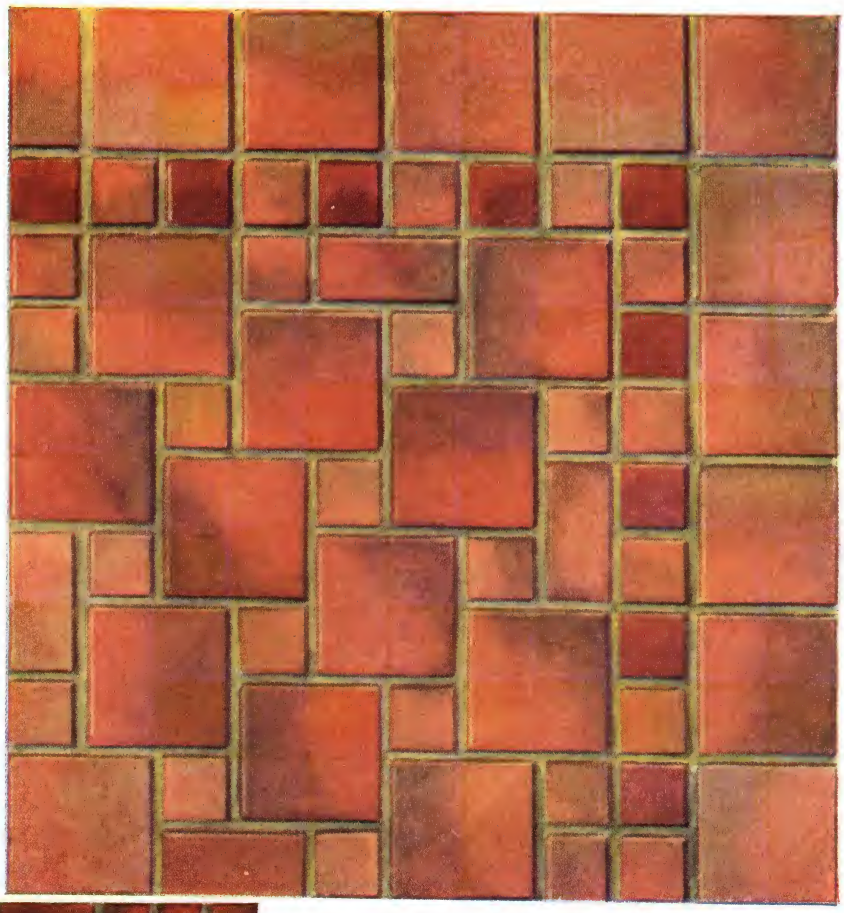
CARLYLE QUARRIES HAVE MANY USES

The present day Carlyle Quarry line offers practical material for floors and walls in all types of buildings. Some of the many types of installations are Lobbies in Post Offices and other buildings, Dairy Plants, Power Plants, Corridors, Kitchens, Toilets, Terraces, Porches, Solariums, etc. Carlyle tile continually satisfies specifications for all types of government work.



CARLYLE FLOOR PATTERN NO. 101

Field: 6 x 6, 2¾ x 6 and 2¾ x 2¾ Random.
Border: 6 x 6, 6 in. diagonal halves, 2¾ in. diagonal halves and 2¾ x 6.

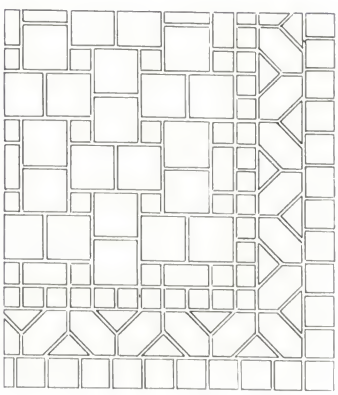


CARLYLE FLOOR PATTERN NO. 102

Field: Staggered check design incorporating 6 x 6 and 2¾ x 2¾ in Egyptian Buff Flash.
Border: 6 x 6 Egyptian and 2¾ x 2¾ alternating Egyptian and Russet.

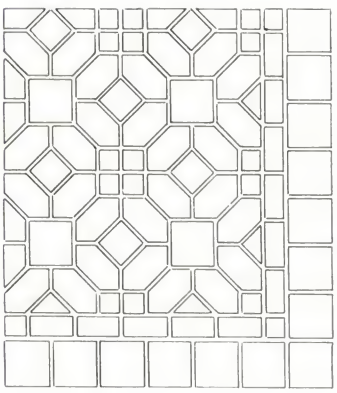
CARLYLE FLOOR PATTERN NO. 117

Field: Elongated Hexagon short halves with 1¾ x 1¾ dots all in Oriental Red Flash.
Border: Inner border 6 x 2¾, Oriental Red Flash. Center border 4 x 4 Russet with 4 inch diagonal halves in Egyptian. Outer border 6 x 6 Oriental.



CARLYLE FLOOR PATTERN NO. 114

Field: 6 x 6, 6 x 2¾ and 2¾ x 2¾ Splint Weave.
Border: 4 x 4, 4 x 8¼ Elongated Hexagon, 4 inch Diagonal Halves and 2¾ x 2¾.



CARLYLE FLOOR PATTERN NO. 107

Field: 4 x 8¼ Elongated Hexagon, 6 x 6, 4 x 4, 2¾ x 2¾ and 4 inch diagonal halves.
Border: 6 x 6, 6 x 2¾ and 2¾ x 2¾

THE CARLYLE TILE COMPANY

CARLYLE QUARRY TILE COLORS — Carlyle Tiles are manufactured in many attractive colors as illustrated below. This group includes plain shades such as Navajo Red, Mecca Brown and Pompeian Buff as well as the beautiful flashed colors having a pleasing variation as Egyptian Buff Flash, Oriental Red and Russet. Many beautiful floor and wall treatments can be arranged with this large selection of Carlyle colors. Samples will be gladly sent on request.

Navajo Red
Shade No. 110

Egyptian Buff Flash
Shade No. 150

Oriental Red Flash
Shade No. 160

Mecca Brown
Shade No. 120

Greytone
Shade No. 140

Cinnamon Brown
Shade No. 130

Pompeian Buff
Shade No. 175

Russet
Shade No. 170

Chestnut Brown No. 195 →

Water Green No. 190 →

Antique Blue
Sh. No. 185

Taupe Grey Flash
Shade No. 200

Black
Shade No. 180

A serviceable, attractive floor of 6 x 6 Quarries.
The Porch of Guyan Country Club,
Huntington, West Virginia.

Carlyle Quarries meet Government requirements
Lobby—United States Post Office,
Pittsburgh, Pennsylvania.

CARLYLE QUARRY TILE Ideal for Many Uses

Permanence and Pleasing Color Treatment Assured

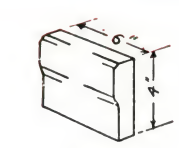
That Carlyle Tile is being chosen for many important projects is indicated by the installations illustrated on this page. Carlyle Tile has proven to be completely satisfactory for various types of installations which subject material to hard usage, such as Post Office Lobbies, Meat Packing Plants, Dairy Plants, Power Plants, Roof Decks, Porches, Hospital Corridors, and Service Rooms as well as Residential Kitchens, Solariums, Entrances and Recreation Rooms. The modern facilities of the Carlyle plant assure prompt service on orders for regular popular items or on orders for special sizes of flat tile or trim.

Many beautiful colors are available, including both plain shades and the attractive flashed colors as shown on Page 25. Regular sizes and trim tiles are illustrated on Page 27.

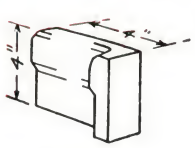
Power Plant of Cornell Medical Center, New York
Architects — Shipley, Coolige,
Bullfinch and Abbot

Carlyle Quarries are safely non-slip and impervious to grease stains and other foreign substances. Extremely practical for kitchen floors.
Kitchen of Queens General Hospital, New York.

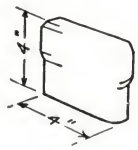
QUARRY TRIMMERS



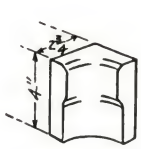
C-100



CA-100

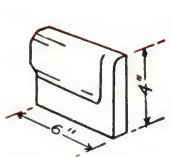


CB-100

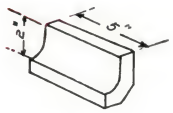


CC-100

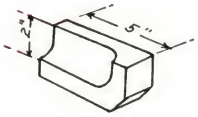
CD-100



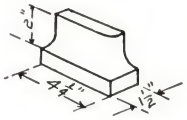
CEL-100



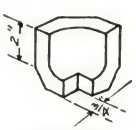
C-200



CA-200

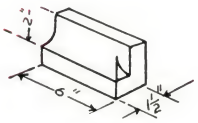


CB-200

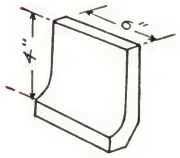


CC-200

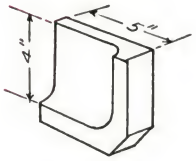
CD-200



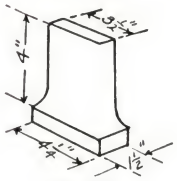
CEL-200



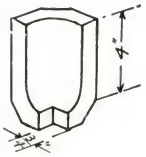
C-300



CA-300

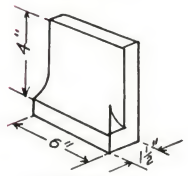


CB-300



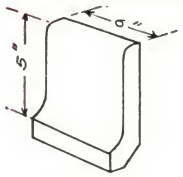
CC-300

CD-300

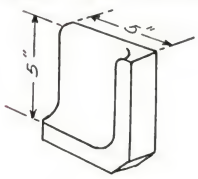


CEL-300

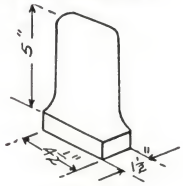
C300 SERIES CAN BE FURNISHED IN 5" HEIGHT



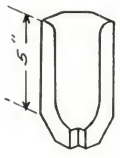
C-400



CA-400



CB-400



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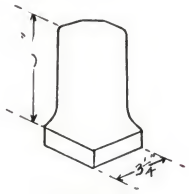

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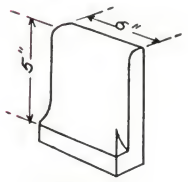
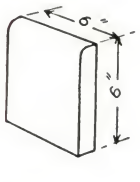


CEL-400



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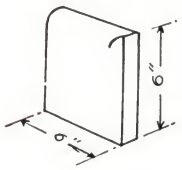

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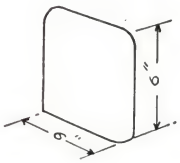

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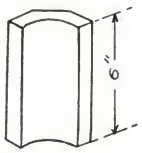

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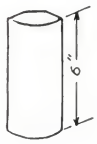

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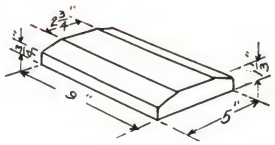

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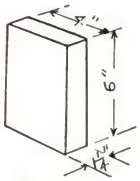

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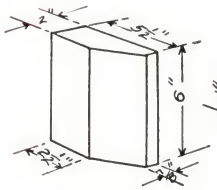

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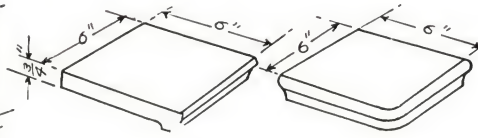
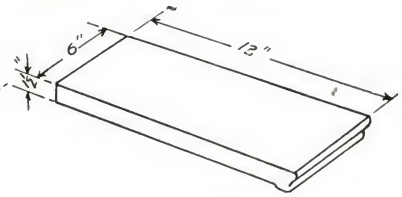


CB-600 CCL-600



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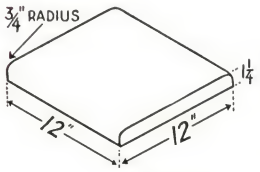

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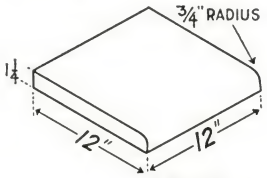

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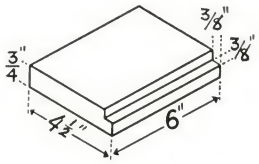

CE-600

Toe Tile, CE-600, used with various size base available in 3", 4½", 6¼" Widths. Also various lengths.

NUMBER OF PIECES PER 100 SQUARE FEET

	12 x 12	5¾ x 12	9 x 9	8 x 8	6 x 9	6 x 6	4 x 4	2¾ x 6	2¾ x 2¾	4 x 8 x 1½ Packing House Tiles
Number of Tiles required to lay 100 sq. ft.										
Tight Joint	100	200	178	225	267	400	900	870	1905	450
¼ inch Joint	96	190	170	212	250	369	795	768	1600	410
⅜ inch Joint	95	183	165	206	242	355	754	730	1500	390
½ inch Joint	93	178	160	200	233	340	711	682	1364	375
⅝ inch Joint	91	173	156	195	226	329	...	...	....	360
¾ inch Joint	89	171	152	190	220	317	...	...	....	347
Number of sq. ft. per 1000 pieces, laid together	1000	500	562	444	374	250	111	111	53	222

4 x 8¼ x ¾ Elongated Hexagon Tiles	No. Pcs. per Square Foot
Whole Tiles	5.7
Square End	7.0

4 x 8¼ x ¾ Elongated Hexagon Tiles	No. Pcs. per Square Foot
Short Half	12.5
Long Half	13.7

OFFICES AND SHOWROOMS
OF

The Mosaic Tile Company

NEW YORK, N. Y. - - - 443 West 41st St.
CHICAGO, ILL. - - - 805 S. Jefferson St.
SAN FRANCISCO, CAL. - - - 524 Second St.
LOS ANGELES, CAL., 149-151 So. La Brea Ave.
ST. LOUIS, MO. - - 6742 Chamberlain Ave.
WASHINGTON, D. C., 1769 Columbia Road N. W.
DETROIT, MICH. - - - 112 Kenilworth Ave.

A large staff of experienced representatives cover the country
Feel free to request consultation service without obligation

FACTORY AND GENERAL OFFICE
ZANESVILLE, OHIO
PLANT No. 2 - - - MATAWAN, N. J.

CARLYLE QUARRIES ON DISPLAY
AT ALL MOSAIC SHOWROOMS

MOSAIC

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THE NATIONAL TILE COMPANY

Real Clay Floor and Wall Tile

ANDERSON, INDIANA

SALES OFFICES

FORT WORTH, TEX., 3033 Fairmount Avenue
DETROIT, MICH., 230 E. Grand River Avenue
LOS ANGELES, CAL., 1178 So. La Brea Avenue
NEW YORK, N. Y., 437 Eleventh Avenue
PHILADELPHIA, PA., 6471 Morris Park Road
CHICAGO, ILL., 37 W. Van Buren Street
PITTSBURGH, PA., 5926 Walnut Street
ST. LOUIS, MO., 1908 Railway Exchange Bldg.
MIAMI, FLA., P. O. Box 424

Manufacture—National Tiles are matured at the highest temperature used in the industry and made under close technical supervision to pass Government and other specifications.

Quality—Unbiased laboratory tests prove that the New National Tile not only pass but lead way beyond the generally accepted requirements of their respective classes, such as non-crazing, strength of bond in shear, glaze hardness, durability, imperviousness to staining, etc.

Grading—National Tiles are graded and the containers are grade sealed in conformity with the United States Department of Commerce Simplified Practice Recommendation R-61-30.

Samples—Of all products furnished upon request. Large panels are on display at our showrooms and at all prominent Tile Contractors.

Warehouses—Through the maintenance of complete stocks at warehouses as well as at the factory, plus extensive manufacturing facilities, we can meet the exacting delivery requirements of any project regardless of size.

Service—SERVICE FOLDERS for A.I.A. File 23A offer up-to-the-minute designs, colors and patterns. Our COLOR BOARDS are a convenient and ready reference showing actual tiles in their original beauty of color. Our designers will develop layouts or submit colored sketches for your individual requirements. Any of these are yours upon request.

Specifications—For A.I.A. File 23A we have prepared "SUGGESTED SPECIFICATIONS" containing detailed specifications and instructions for all types of installations and uses, detail sheets of good versus poor practices, etc. Yours for the asking.

PRODUCTS

GLAZED WALL AND FLOOR TILE

⅜" thick		½" thick		¼" thick	
600 LINE Matt Glaze	800 LINE Bright Glaze	1000 LINE Matt and Bright Glaze	2000 LINE Matt and Bright Glaze	Glazed CERAMIC MOSAIC Matt and Bright	COLORS
SIZES 4¼"x4¼", 6"x3", 6"x6", 3"x3", 4¼"x2 1/16", 2 1/16"x2 1/16" Trimmers		SIZES 2 1/16"x2 1/16", 4¼"x2 1/16", 4¼"x4¼", 3"x3"	SIZES 4¼"x4¼", 3"x3", 4¼"x2 1/16", 2 1/16"x2 1/16", 2", 3" and 3¾" Hex. 3" Oct., 4¼" Oct. Trimmers	SIZES Same sizes as Unglazed Ceramic Mosaic	The new and exclusive MIST-TONES and an unusual range of Pastels Also many other popular colors Color Board of actual Wall Tiles furnished gratis
USES Interior Walls and Ceilings		USES Interior floors subject to light use	USES Interior or Exterior Walls Swimming Pools Store Fronts, Subways Kitchen Sinks, etc. Floors subject to light traffic		

CERAMIC MOSAIC AND PAVERS

IMPER-VIT CERAMIC MOSAIC	PAVERS	COLORS
Vitreous Unglazed and Non-Slip ¼" thick	Vitreous and Semi-vitreous Floor Tile ½" thick	Wide range of hues in Plain Colors PAST-L-TEX Stipples Speckled Granites and Non-Slips of any of these Color Board of actual Ceramics furnished gratis
SIZES ⅜"x⅜", ¾"x¾", 1 9/16"x¾", 1 9/16"x1 9/16", ½"x½", 1 1/16"x½", 1 1/16"x1 1/16", 2 3/16"x1 1/16", 2 3/16"x2 3/16" 1" Hex., 1¼" Hex., 2" Hex., 1 13/16" Rounds Trimmers	SIZES 2" Hex., 3" Hex., 2⅛"x2⅛", 3"x3"	
USES Floors and all surfaces subject to hard use Interior or Exterior Walls Swimming Pools Subways Kitchen Sinks, etc.	USES Interior or Exterior Floors subject to hard use	

STUDIO DECORATED TILE

Hand decorated Stock Panels, Strips, Inserts
Bander Tile and Floral Sprays
Special designs to order

COLORS
Standard and special colors filling numerous decorative processes

ACCESSORIES

For Kitchens and Bathrooms
Recessed and projecting fixtures. Grilles and Switch Plates

COLORS
Harmonizing and contrasting with wall tile or trimmers

DISTRIBUTED BY THE NATIONAL TILE COMPANY

HANLEY QUARRIES—FALLSTON TILES—TRUMBULL SANOWARE ACCESSORIES—GERITY CHROME ACCESSORIES

561

ROBERTSON ART TILE CO.

TRENTON, N. J.

NEW YORK, N. Y., 101 Park Avenue
DETROIT, MICH., 230 E. Grand River Avenue
CHICAGO, ILL., 22 E. Huron Street
MIAMI, FLA., 5024 N. E. 2nd Avenue
HAMILTON, BERMUDA, Lusher & Ambard Co.

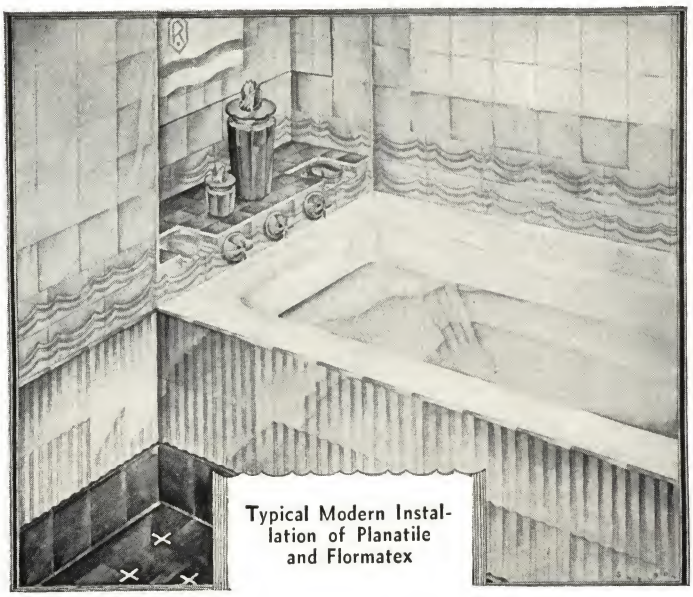
Manufacturers of WHITE WALL TILE, MATT and BRIGHT COLOR ENAMELS, CHROMATEX MOSAIC, CERAMIC MOSAIC, DECORATIVE TILE, TRIMMERS and the exclusive innovations—PLANATILE, INCISED PLANATILE, FLORMATEX, SUPROTILE and TREDTEX.

Planatile

Robertson Planatile is a glazed wall tile with moulded surface. There are two types of Planatile—incised designs and relief designs. Incised designs permit the color of the tile to become an inseparable part of the design by the controlled gradation of the color tones. Robertson Planatile is available in either bright finish or in a lustrous semi-matt finish characterized by a rich satin sheen.

Flormatex

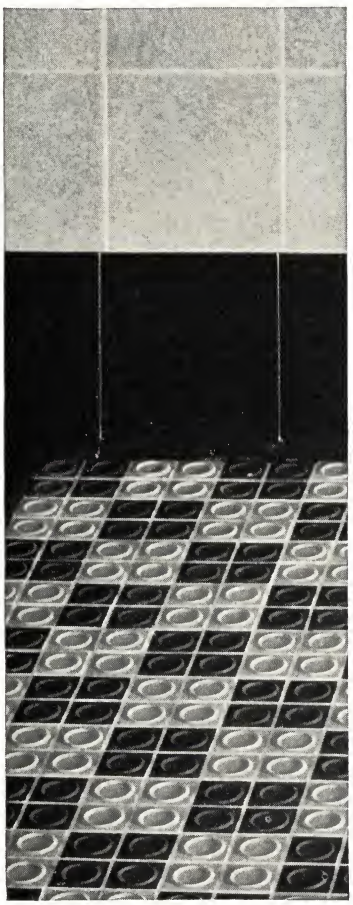
Flormatex is a distinctive Robertson product for floors. This tile is a very hard-bodied material which is glazed in a complete line of matt colors to match or blend with any wall treatment.



Typical Modern Installation of Planatile and Flormatex

Suprotile

This is a new vitreous wall tile made in 4¼ x 4¼-in. size only, glazed in bright white and a few selected colors. The chief feature of this tile is the fact that it passes the most severe tests yet devised in the laboratory for crazing, freezing, absorption, etc. No tile on the market has equalled its resistance to every known durability and hard service test. The new subway stations in Philadelphia and Camden, built in connection with the High Speed Line over the Delaware River Bridge at Philadelphia, required a tile unaffected by dampness, freezing temperatures, thermal contractions, and expansions which result in crazing. Only Suprotile is being installed.



Tredtex—A New Non-slip Floor Tile

The Supreme Quality of "Snowhite"

We called attention in the 1935 Sweet's Catalog File—Architectural to our newly developed "Snowhite" Wall Tile.

On January 1, 1935, we revolutionized our manufacturing process throughout the plant and turned our entire wall tile production over to this new tile. It had passed the experimental stage and is today a new standard for quality in the tile industry.

On October 1, 1935, a million square feet of this new wall tile had been made and used on every type of wall tile installation found in present day usage.

Not a single complaint of crazing (or cracking) of the glaze had been found. The greatest handicap to a wider use of glazed wall tile has been solved by Robertson.

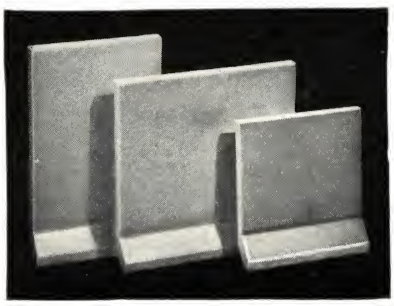
In addition to the bright white enamel glaze which gives this tile the name "Snowhite" the same tile can now be supplied in a full line of bright and matt colors and in bright and matt black.

It is obtainable not only in the usual sizes but also in the structural size units—6 x 12 in., 3 x 12 in., 6 x 9 in. and 3 x 9 in.

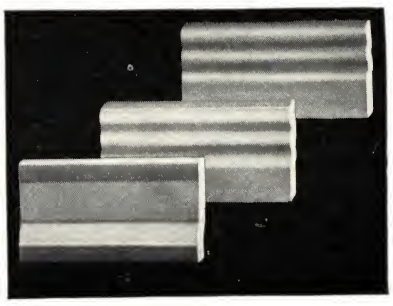
Guarantee

For a small premium of approximately 10%, a certificate of guarantee against crazing for a period of two years will be furnished by the Company. This assumes the cost of complete replacement of an installation by Robertson in the event the glaze on this tile should fail.

We invite inquiry for further details about this new tile. The product is of supreme importance to architects specifying wall tile.



Buttress Base



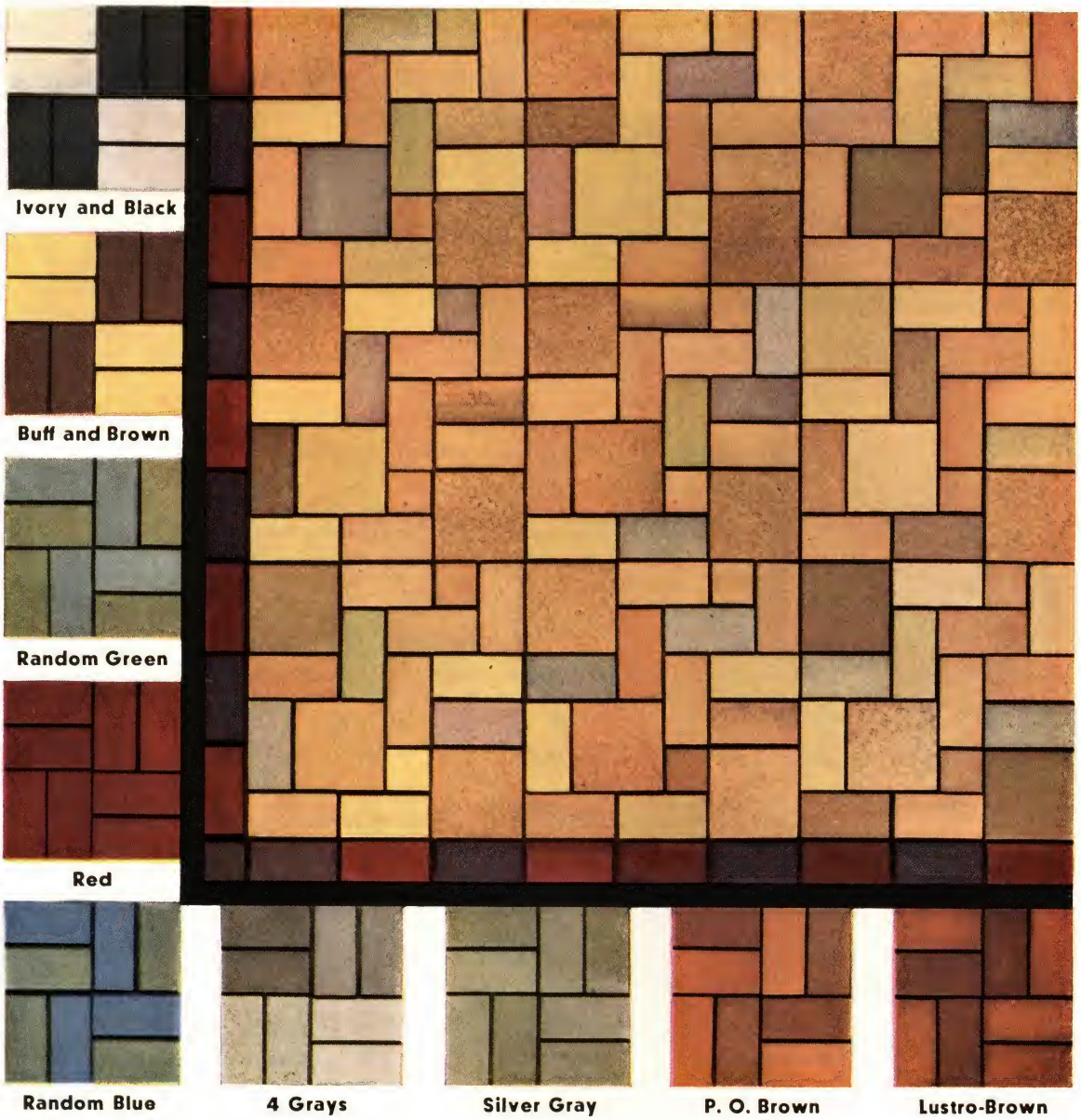
Set-back Caps

THE SPARTA CERAMIC COMPANY

EAST SPARTA, OHIO

OFFICES IN PRINCIPAL CITIES

#310 Golden Pheasant



SPARTA GOLDEN PHEASANT

A Distinctive Tile for General Use

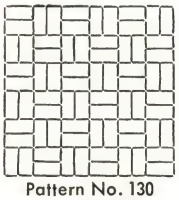
Sparta Golden Pheasant, for floor and wall surfaces, fulfills every requirement for a neutral shade in color tones that will successfully combine with all surrounding colors in bath room or kitchen. It harmonizes well with adjoining wood floors in bed rooms and halls, so that the transition from one type of decoration to another is accomplished without discord. Golden Pheasant is a fire-flashed color with usual variations, and offers the advantage of no two units having exactly the same shade. The tile itself is sturdy and permanent. There is no glaze to fracture. Installation is made by "floating" method, simplifying the work and reducing cost.

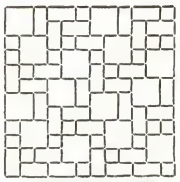
Where it is desired to repeat colors in floors or walls which complement plumbing fixtures and trim, Sparta Faiencettes (matt glazed tiles in small sizes) in any suitable proportion, can be incorporated with Golden Pheasant.

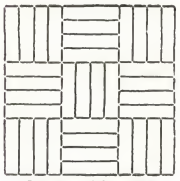
(SEE FOLLOWING PAGE)

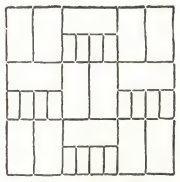
SPARTA CERAMICS—VITREOUS CERAMIC MOSAIC TILES

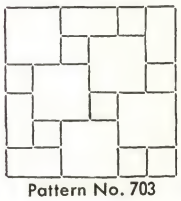
Pattern No. 110

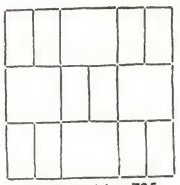

Pattern No. 130


Pattern No. 300


Pattern No. 738


Pattern No. 557


Pattern No. 703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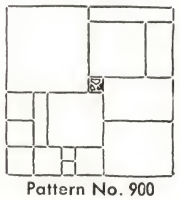
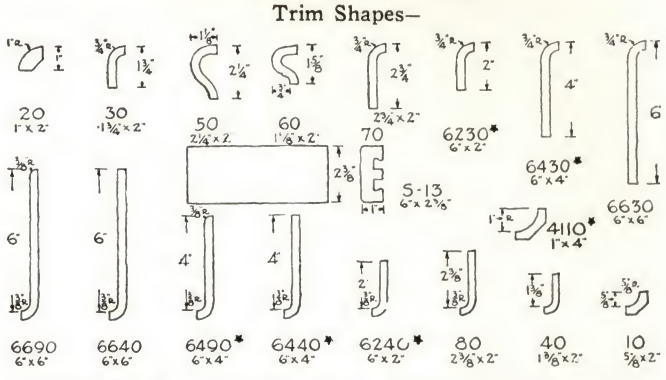

Pattern No. 900

Products – Manufactured by a natural plastic extruded method, and fired at a high temperature. Made from pure shale and clay, and include no grog. Unusually rugged in wearing quality and resistance to abuse. Being made in usual ceramic mosaic colors as well as special Sparta colors, and in the greatest variety of ceramic mosaic sizes, they find a wide field of suitable uses.

Men's Toilet in the Christian Science Publishing Bldg., Boston, Mass.
CHESTER L. CHURCHILL, Architect

Trim Shapes–



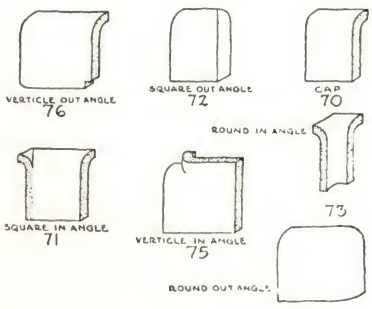
Vitrification – Sparta Ceramics vary slightly in their degree of vitrification. Their absorption, depending on their color, ranges from 1% to 3%, which is a safe variation for vitreous tile. Sparta Ceramics are non-staining, readily cleanable, dense enough to resist temperature changes, and rugged enough to resist abuse.

Non-Slip—The method of Sparta manufacture causes all of the tiles to have a more mechanically non-slip surface than usual floor tiles. This slight irregularity in surface texture makes Sparta Tiles especially suitable for such hazardous spaces as floors in corridors in public buildings, shower and bath rooms, and swimming pool rooms.

Irregularity—Because Sparta Ceramics are made by an extruded plastic method, we are able to obtain a very slight irregularity in sizes and shapes which lends interest to the finished job, either where pattern is distinctly mechanical or where a variation of sizes is combined to form a pattern. In contrast to sharp mechanical outlines of dust-pressed tile, where errors in setting are so apparent, Sparta tiles present a finished "custom-made" look.

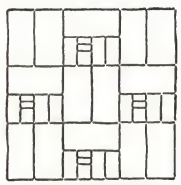
New Faiencettes—A matt glazed tile of small size in ten attractive colors. For a moderate price floor that will match plumbing fixtures, wall tiles or glazed colors. And as a wall surface, Faiencettes offer a pleasing variation from larger tile or faience, in raising scale of room. Design possibilities are unlimited. Sizes are 1″ x 1″, 2″ x 1″ and 2″ x 2″.

Patterns—With range of sizes available in Sparta Ceramics, the pattern possibilities increase indefinitely. We show, on this page, fifteen patterns suitable for either walls or floors. We also furnish all of the well-known patterns such as straight or broken joint squares, staggered square, basket, random, herringbone, wicker weave, etc. Any pattern shown as well as standard and special patterns are shipped to job pasted on paper ready for setting in regular ceramic mosaic manner.



TYPICAL ANGLES FOR ALL SPARTA TRIM

* Furnished in 4″ or 6″ lengths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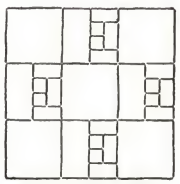
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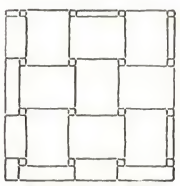
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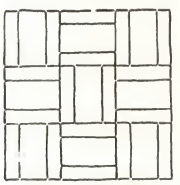
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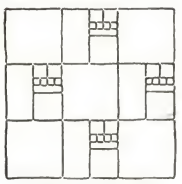
Pattern No. 174

Pattern No. 137


Pattern No. 765

STANDARD WALL COVERING COMPANY, INC.

Manufacturers and Originators (1908) of One-Piece Wall Panels

1819 N. 9th Street, PHILADELPHIA, PA.

DISTRICT OFFICES

BOSTON, MASS. NEW YORK, N. Y. WASHINGTON, D. C. RICHMOND, VA.

*MONOWALL—FACTORY-FINISHED PANELS FOR MODERN INTERIORS

*MONOTILE (Fibrous Wood) *MONOMARB (Marble Designs) *MONOLITE (Solid Colors) *MONOWOOD (Wood Designs)

*Reg. U. S. Pat. Off.

MONOWALL is a strong, tempered, chemically waterproofed fibre panel. The surface is heat treated and vulcanized under pressure, then factory finished to make it smooth, sanitary and easily washed. It is ready to apply on delivery and requires no additional finish. MONOWALL comes in four distinctive effects; each with a wide choice of colors and designs.

MONOTILE (FIBROUS WOOD)—The ideal wall covering for bathroom and kitchen walls; for stores, restaurants, dairies and hospitals.

Colors—See chart below.

MONOMARB—The Monowall panels that offer faithful reproductions of rare, imported marbles.

Designs—MONOMARB is offered in six designs: Breche Rose, Verde, Rose de Brignolles, Light Skyros, Jaune Benou and Black and Gold.

MONOLITE—Solid color sheets in a wide color range. Very adaptable for the modern decorative technique—planes, relieved by bright alloy or chromium channels; contrasting color combinations.

Colors—MONOLITE available in same field colors as Monotile (shown below)—plus Chinese Red, Persian Turquoise Blue and Lemon Yellow.

MONOWOOD—Exact reproductions of the most decorative woods. Graining and colorings indelibly imposed upon MONOWALL's waterproofed panels. Ideal for offices, libraries, lounges, and game rooms. The beauty and charm of natural woods without the danger of warping and checking.

Grains—MONOWOOD comes in four grains and colorings: Avodire, Prima Vera, Circassian Walnut, Quartered Walnut—American.

STANDARD COLORS AND SHEET SIZES OF MONOTILE—FIBROUS WOOD

Number	Field	Line Color
110	White	Warm Gray
120	White	Chinese Red
130	White	Black
210	Ivory	Warm Gray
220	Ivory	Black
230	Ivory	Apple Green
240	Ivory	Chinese Red
310	Nile Green	Light Ivory
320	Ocean Green	Olive Green
410	Chinese Blue	Light Ivory
510	Black	White
610	Apricot	Light Ivory

MONOWALL panels, in all designs, are made 4′ high, 4′, 5′, 6′, 8′, 10′ and 12′ long, by 1/8″ thickness. Monomarb and Monowood also available 32″ x 48″ x 3/16″.

MONOLITE also available in the above colors, plus Chinese Red, Persian Turquoise Blue and Lemon Yellow.

EASILY APPLIED

MONOWALL in all designs is easily applied by any reasonably careful mechanic. Worked like lumber, it can be applied over most wall surfaces with but little preparation. Complete instructions for estimating and applying MONOWALL will be sent upon request. Application instructions accompany each shipment.

KITCHEN sidewalls of Ivory MONOTILE with black mortar line to wainscoting. Ivory MONOLITE on upper walls and ceiling.

BREAKFAST ALCOVE with White MONOTILE, red mortar line on lower walls; White MONOLITE on upper walls and ceiling. Alloy connecting channel at wainscot.

STANDARD WALL COVERING COMPANY, INC.

MONOWALL

Trade Mark Registered

MONOWALL ACCESSORIES

MONOWALL is applied by cementing or nailing, or both, depending upon design. In either case, the channels and moldings shown on this page increase the ease of installation, insure tight, straight joints and enhance the beauty of the wall surface.

MONOWALL channels are available in chrome and in alloy metal, bright finish. Also in colors to match the MONOWALL panels.

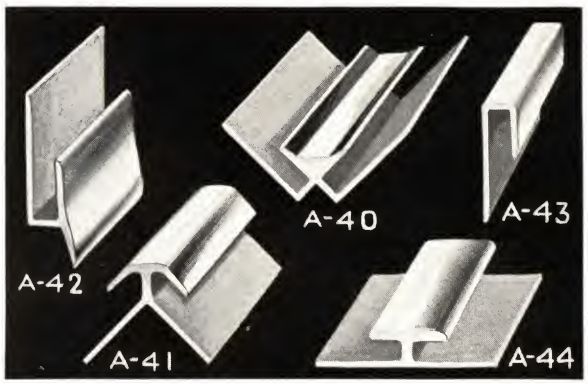
Connecting channels such as A-44, C-22, etc., are used for both vertical and horizontal joints on the wall surfaces. The inside and outside corner channels shown in the illustrations (A-40, A-41, C-20, C-21) banish the unsightly cracks that develop in plastered, papered or ordinary tiled walls, and insure neat corners.

In most cases the channels should be used without nailing them to the wall. Simply fit the MONOWALL panels into the grooves and attach them in the usual way—either nailing or cementing. The channels will then be secure and tight, and will act as a straight-edge for the panels.

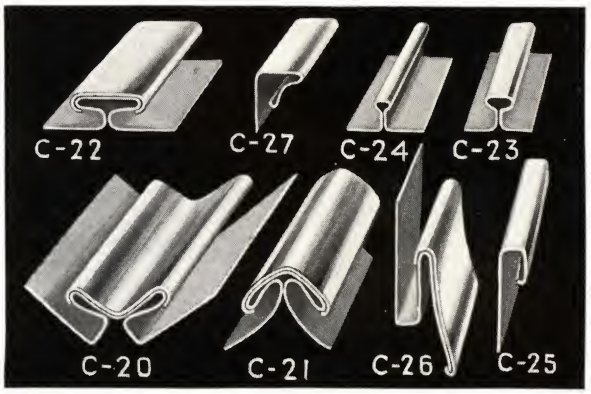
When the walls are square and straight, the channels may be fastened with nails. This should be done before the panels are erected.

All cap and base moldings are attached after the panels are in place. When alloy or chrome moldings are used they should be screwed to the wall.

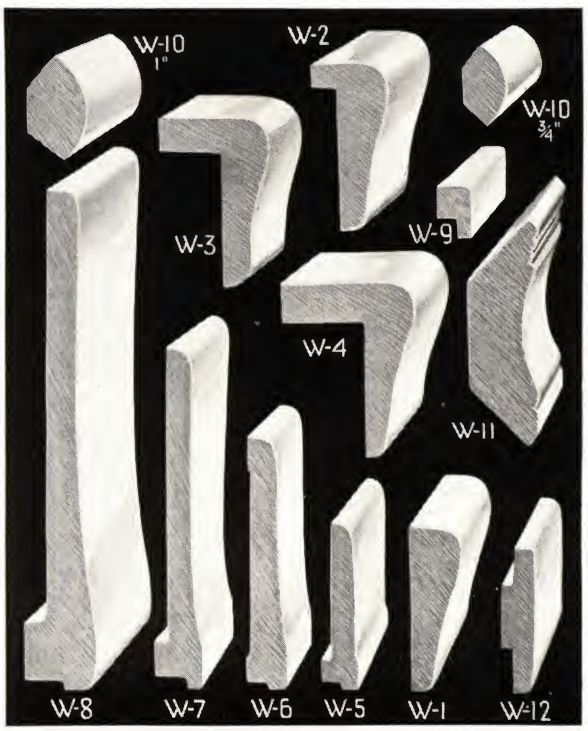
Here's a Mono-Wall bathroom that's a dream, using the tile design (Mono-Tile—Fibrous Wood) all the way to the ceiling. Many architects prefer Mono-Lite—solid color panels—for upper walls and ceiling.



White Metal Alloy Channels



Chromium Plated Metal Channels



Standard Wood Moldings

SECTION 11

CONTINUED ⟶

THE TILE MANUFACTURERS' ASSOCIATION

19 West 44th Street, NEW YORK, N. Y.

"PREPARED TO SERVE THE ARCHITECTURAL PROFESSION"

ALHAMBRA TILE COMPANY
AMERICAN ENCAUSTIC TILING CO., INC.
CARLYLE TILE COMPANY
FRANKLIN TILE COMPANY
GLADDING, McBEAN COMPANY
GLIDDEN, CLAYCRAFT TILES
HANLEY COMPANY
B. MIFFLIN HOOD BRICK COMPANY
MATAWAN TILE COMPANY
MOSAIC TILE COMPANY
MUELLER MOSAIC COMPANY
MURRAY TILE COMPANY
NEW JERSEY TILE COMPANY
NEWTOWN TILE COMPANY
OLEAN TILE COMPANY
PENN TILE WORKS COMPANY
THE SPARTA CERAMIC COMPANY
THE STANDARD TILE COMPANY
THE U. S. QUARRY TILE COMPANY
THE WENCZEL TILE COMPANY
THE WHEELING TILE COMPANY

ARCHITECTURAL CONSULTANTS

THE TILE MANUFACTURERS' ASSOCIATION takes pleasure in offering to architects the able assistance of two architectural consultants. One is located in the New York City office; the other in Washington. These men are well versed in tile design and are ready at any time to offer architects and draftsmen expert advice. Unless one has made a thorough study of tile, it is difficult to appreciate the varied assortment of sizes, shapes, types and colors of tile that are available in the industry. The average architect cannot be expected to have a complete grasp of the various units and should be able, when necessity arises, to call on the services of men who are familiar with this product.

SPECIFICATIONS

The Association recently sent to every architectural office, a copy of "Basic Specification for Tile Work"—known to the Tile Industry as "K-300". This copy, designated as the 1937 Edition, has been completely revised in the light of more advanced knowledge of tile and its application and installation. Architects, manufacturers and contractors co-operated to make it an outstanding contribution to a better understanding of proper tile specifications. The book is divided into seven sections listed as follows: Terms, Scope, Materials, Installation, Mortar Mixtures, Single Paragraph Specification and Modifications or Additions, and is carefully indexed. The section on Mortar Mixtures should prove especially helpful to an architect. If your office has not already received a copy of this Standard Specification, the Association office will send one on request.

INDIVIDUAL DESIGN DEPARTMENTS

Most of the members of THE TILE MANUFACTURERS' ASSOCIATION have design departments set up for the use of architects. The tile designers in these departments understand how tile should be used to gain the desired effect, and are able to work up the architect's own ideas using as far as possible standard sizes, shapes, colors and textures. They are prepared not only to offer advice but, on request to make color sketches and rough detail drawings. The Association's Architectural Consultants can give the architect information on what is generally available throughout the industry; the manufacturers' design departments are able to give specific information on their own factories' products. Representatives of any of the above member factories will be pleased to give further details on their service.

RESEARCH

A Research Laboratory, located at Rutgers University, has been maintained for many years under the joint sponsorship of THE TILE MANUFACTURERS' ASSOCIATION and the Tile and Mantel Contractors' Association. This laboratory is under the direct supervision of the Tile Industry Research Bureau and a professor of ceramics. Much time is devoted to the proper application of tile under unusual conditions of use and exposure, and to methods of installations, such as setting beds and mortar mixtures. Manufactured tile is also tested for its qualifications and adaptabilities. On request, any manufacturer will present to the architect a certificate of test from the laboratory. The Research Bureau is always ready to assist the architect in solving problems of a technical nature. Further information may be had by writing the Association office in New York.

SHOWROOMS

The Association has two very extensive displays of tile, one in the Treasury Building in Washington, D. C. and the other in the Merchandise Mart in Chicago. Most of the members have their own individual showrooms in New York City, Chicago and other large cities. In these showrooms are displayed tile for every conceivable purpose, with a complete assortment of sizes, shapes and colors. Each manufacturer has his individual catalogues, which will be sent on request.

CONTRACTORS

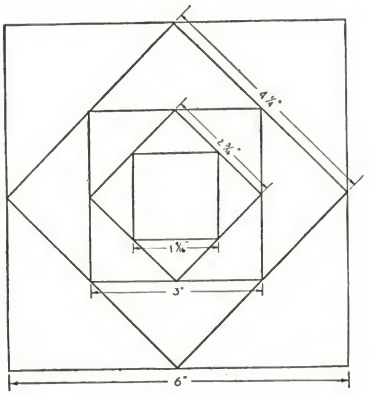
Proper workmanship in setting tile is an essential factor in good installations. Qualified tile contractors are available in every secton of the Country. Many of these contractors have their own showroom and are able to assist the architect in design, selection and specification. They will be pleased to show you examples of their workmanship, in many cases dating back over a period of years. Architects have found them willing to assist in working out special designs and decorative effects. On every job, where standard grade tile is used, the architect should ask the contractor to furnish a grade certificate signed by both the manufacturer and the tile contractor.

LITERATURE

Any requests for information on tile, tile design or specifications, should be addressed to the Association Office. If information desired is not covered in printed literature, the Secretary of the Association will personally prepare an answer.

GENERAL

The term "Tile" includes all kinds of glazed and unglazed non-structural units which are made exclusively from clay and/or other ceramic materials, and are burned in the course of manufacture. They are used solely as a finishing or surfacing material, generally on walls and floors.



During the development of the Tile industry since almost prehistoric times, there has arisen a nomenclature peculiar to this product. It is not intended here to define such terms as Faience, Ceramic Mosaic, Quarries, Flints, Pavers, etc., or degrees of vitreousness and other properties. Such information is found in the catalogues of individual manufacturers.

The classification below on the basis of use and application, will assist architects and others in selecting the general type of Tile desired.

PHYSICAL CHARACTERISTICS

Tile is fireproof, waterproof, greaseproof and verminproof and has thoroughly demonstrated its wear-resistance, ease of cleaning and practically negligible maintenance.

SIZES

In general, sizes of Tile are based upon a geometric retrogression from a 6-in. square—an inheritance from medieval potters, which is still in use today. This relationship in dimensions permits wide scope in design and pattern within a given area. Actual shapes and dimensions of tile are listed in the catalogues of individual manufacturers which will be furnished on request by any of the companies listed.

To meet the requirements of angles, corners, recesses, etc., there are a variety of standard shapes known as 'trimmers." The Association will furnish on request a dimensioned chart of standard trim shapes. This information is also included in practically all manufacturers' catalogues.

COLORS

No attempt will be made here to discuss the colors which can be obtained in modern Tile. Literally hundreds of colors, including many blends and combinations, are available, with a variety of finishes and surface textures to meet demands of design and decoration. Standard colors of bathroom equipment, plumbing fixtures and kitchen cabinets can be matched. Special colors can be obtained upon request.

Most of the manufacturers' catalogues contain sets of color plates. Architects are also invited to visit showrooms of the Association, of member companies or of Tile contractors where colors, shapes and sizes of Tile are on display. Samples will be furnished when requested. Colors are designated by number.

CLASSIFICATION OF TILE

In general Tile may be classified as "exterior" or "interior" and as "wall" and "floor."

INTERIOR WALL TILE

Tile for this use is manufactured in four standard sizes, 4¼ x 4¼ in., 6 x 3 in., 6 x 6 in., and 6 x 12 in. These tiles are usually glazed, with either a matte or bright glaze finish and are obtainable in various colors. Glazed faience tile are usually available in sizes ranging from 1 x 1 in. to 12 x 12 in. in an even wider range of colors. Glazed and unglazed ceramic mosaic tile is also used on walls, especially where graduated shaded effects are desired. Base, cap, strips and other trim shapes are available to meet structural requirements.

INTERIOR FLOOR TILE

Many different types of tile are used for flooring but the one in most common usage is ceramic mosaic tile. This type is manufactured in small units. For delivery to the job, many of these units or tiles, are pasted on sheets of paper about 1 x 2 ft. in size. This not only greatly simplifies the tile setters labor, but assures that designs will be accurately followed as the tile are pasted-up at the factory in the patterns desired. Because of the small units and wide color range practically any design can be obtained.

Glazed ceramic mosaic and glazed faience tile are also used as flooring. However, glazed tile should never be used on areas subject to hard wear.

Quarry tile is manufactured in sizes ranging from 1 x 1 in. to 12 x 12 in. It is particularly adapted to use on school and hospital floors and on the floors of public buildings. This tile is also used for porch and vestibule floors and sometimes on wainscots in corridors of public buildings. When a floor is subjected to heavy wear, such as in industrial plants, garages and basements, a Paver type of tile may be used. Trim shapes are made to fit all conditions where floor tile is used.

EXTERIOR WALL TILE

Weatherproof tile manufactured in standard sizes 4¼ x 4¼ in., 6 x 3 in. and 6 x 6 in. are available for exterior work. Weatherproof faience is also manufactured for exteriors in various sizes. When water is present under freezing conditions weatherproof tile should always be used. Ceramic mosaic tile which meets weatherproof tests, is largely used on exterior installations, such as swimming pools and fountains, etc.

EXTERIOR FLOOR TILE

For walks, terraces, roof decks, etc., quarry tile or weatherproof ceramic mosaics are generally specified. Abrasive "non-slip" tile are also available for such installations as walks around swimming pools, exterior stairways, etc.

SPECIAL APPLICATIONS

The decorative possibilities of tile and its well-known resistance to wear will indicate many other applications where its physical properties, unfading colors and flexibility in design can be used to interpret the architect's plans and ideas. Many of these applications will be found in the manufacturers' catalogues. The Association, or any member, will be glad to assist in developing proper specifications for unusual installations.

UNITED STATES QUARRY TILE COMPANY

Manufacturers of Romany Tiles for Floors and Walls

CANTON, OHIO

BRANCH OFFICES

NEW YORK, N. Y., 110 East 42nd Street
PHILADELPHIA, PA., 2402 Market Street
NEEDHAM, MASS., 125 Birds Hill Avenue
CLEVELAND, OHIO, Room 410, 5005 Euclid Avenue
MT. VERNON, OHIO, 31 East Gambier Street
CHICAGO, ILL., 2706 West Van Buren Street
MIAMI, FLA., 810 Professional Building
HOUSTON, TEX., 414 M. & M. Building
LOS ANGELES, CALIF., 734 No. Highland Avenue
SAN FRANCISCO, CALIF., 682 Haight Street
PORTLAND, ORE., 630 N. W. 10th Street

FACTORIES: PARKERSBURG, W. VA., and EAST SPARTA, OHIO

Members of Tile Manufacturers Association

Quarry Tiles
Glazed Wall and Floor Tiles

ROMANY TILES
TRADE-MARK

Bathroom Accessories, Clay
Bathroom Accessories, Chromium
Inserts, Glazed and Unglazed

ROMANY QUARRY TILES

Grades

Romany Standard—These tiles are sound and solid in every particular. Approximately level and regular in their lines with only slight variation in lengths, widths and shades.

Romany Standard Perfected Four Sides — These tiles are especially made and selected to set with close joints.

Romany Seconds—These tiles are those rejected from Standard grades.

Round edge tiles will be furnished when required.

Colors

Romany Rainbow—Colors range from light buff through tan and orange to dark brown, and there is a pleasing variation of color over the face of each tile. They may be selected, if preferred, in "Dark Blend," "Light Blend" and "Full Range." Also Gray Blend and Brown Blend.

Romany Redflash — Tiles are supplied in a full range of colors from deep red to brown and gunmetal on a red background. There is a distinct variation in shading over the face of the tiles.

Romany Gray—Tiles are extensively used both alone and in combination with other Romany colors.

Romany Brown—Tiles are of a soft, pleasant almost chocolate color.

Romany Black—Tiles are a dull matt black.

Romany Red—Tiles are a deep rich red in color and are furnished in light red, medium red or dark red.

Romany Veined Tiles—See following page.

SIZES (INCHES) AND SHAPES

Square Tiles	Rectangular Tiles	Hexagon Tiles
12 x 12 x 1⅛	6 x 12 x 1⅛	4 x 8 x ¾
5¾ x 5¾ x 1⅛	5¾ x 12 x 1⅛	9 inch 6 inch
9 x 9 x ⅞	6 x 9 x ¾	
8 x 8 x ⅞	2¾ x 6 x ¾	All halves and other shapes necessary to completion of pattern designs are furnished at same price per square foot as whole hexagon titles.
6 x 6 x ¾	2¾ x 6 x ½	
4 x 4 x ¾	1¾ x 4 x ¾	
4 x 4 x ½	**Stair Treads**	
2¾ x 2¾ x ¾	12 x 12 x 1⅛	
2¾ x 2¾ x ½	6 x 12 x 1⅛	
1¾ x 1¾ x ¾	9 x 10¼ x 1⅛	
1 x 1 x ¾	6 x 6 x 1⅛	

Diagonal halves of all square tiles are furnished.

ROMANY GLAZED TILES, DUST PRESSED

Unusually Durable and Craze Resisting for Walls and Floors

Romany Glazed Wall and Floor Tiles represent a decided forward step in the manufacture of this type of tile. The biscuit or body of the tile is so compounded that its coefficient of expansion and contraction is practically identical with that of the glaze coating. Due to this fact and the extremely high temperature at which the tiles are fired, an unusually durable tile is produced.

Sizes (in Inches)

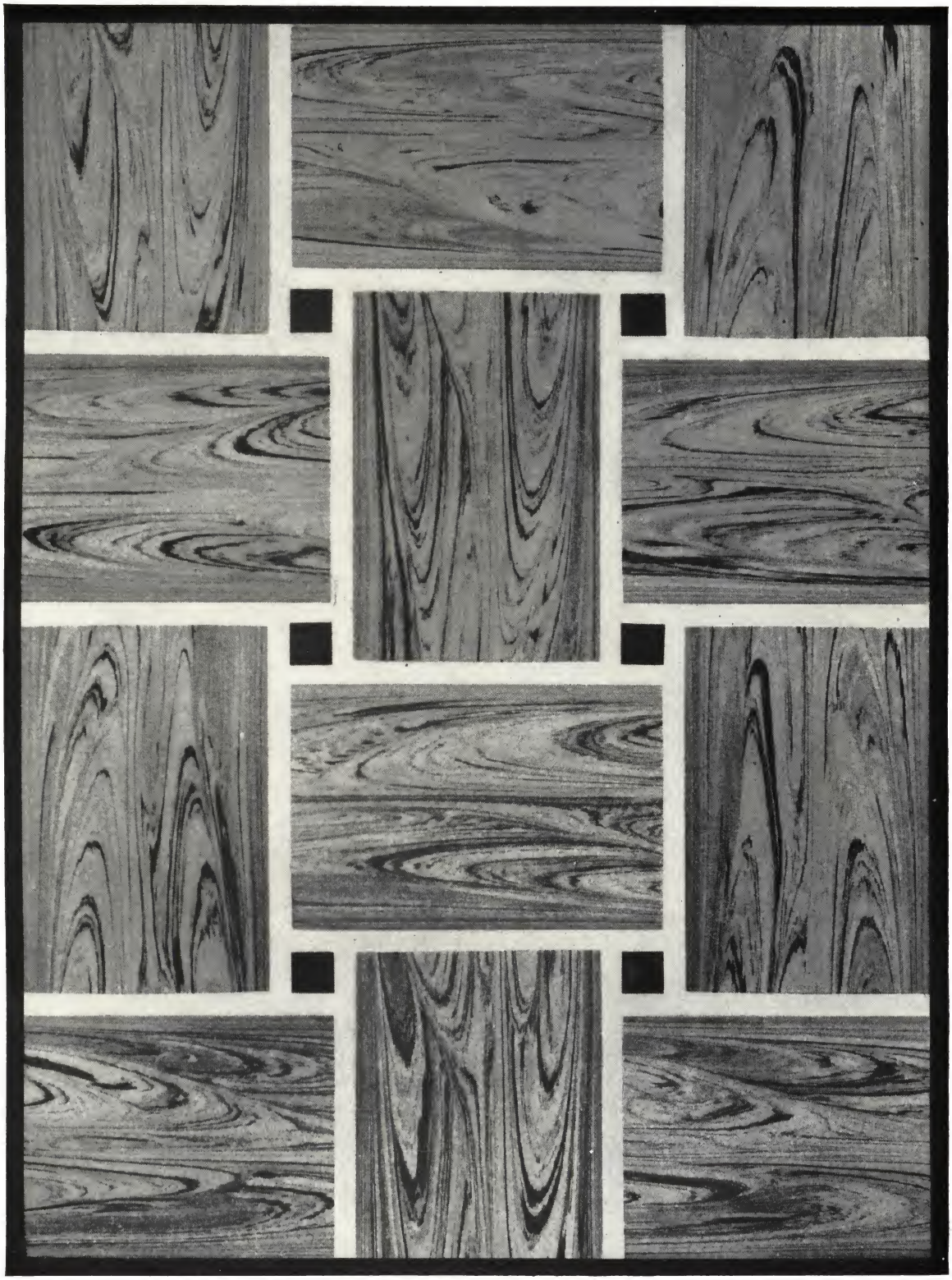
Plain or cushion edge, 6x6, 6x3, 4¼x4¼, 3x3, 4¼x2$\frac{1}{16}$, 2$\frac{1}{16}$x2$\frac{1}{16}$.

Plain edge. 3-in. hexagon.

A complete line of wall tile trimmers is manufactured in the usual shapes and all tile colors.

BATHROOM ACCESSORIES

A complete line of clay bathroom accessories which are colored and glazed to harmonize with Romany Glazed Wall Tiles; white, black and colored pyralin towel bars; opal, clear crystal and black glass shelves are always available. We also furnish a complete line of chromium accessories.



Gray Body Black Veins

ROMANY VEINED QUARRY TILES

These tiles were developed to meet the decorative requirements of the very finest interiors. They have the same smooth, wear-resisting surface which is characteristic of all Romany Quarries and, in addition, have a rich veining which extends through the entire thickness. This veining gives a texture, or all-over effect, which harmonizes with other decorative material.

Romany Veined Tiles are made in gray and red body colors at present, and furnished at no increase in cost.

THE BOSTWICK STEEL LATH CO.

Manufacturers of Super-Bostwick "Truss-Loop" Lath for Reinforcing Tile Applications

NILES, OHIO

For Complete Bostwick Metal Lath Line, see File Index

Aside from its excellence as a plaster base, Super-Bostwick "Truss-Loop" Lath enjoys preference by hundreds of exacting tile appliers as a reinforcement and backing for tile applications. This favor was extended to the original lath in the early nineties and has been strengthened by successive improvements in the product which have produced the Super-Bostwick "Truss-Loop" of today.

An instance of this outspoken preference comes in the form of a letter addressed to Bostwick by Clarence W. McCaulley, when president of the Tile & Mantel Contractors Association, saying, "I desire to advise that it is the opinion of the writer * * * that "Truss-Loop" Metal Lath is the best back for tile on wood construction that is manufactured in this country: and I would go on record as recommending this lath to all architects and owners who desire a high class, permanent installation of tiles."

Requirements—Lath used in the backing of tile must withstand—(1) the impact of the mallet driving tiles into place during installation, and (2) the burden of an unusually heavy application during long years of service, during which any disturbance to the backing is likely to result in cracking at joints.

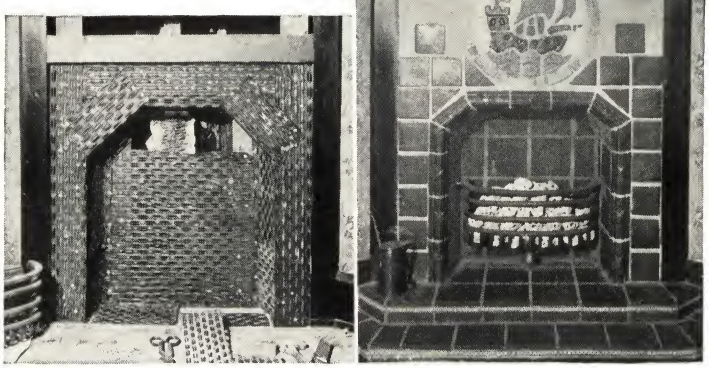
Method of Application—A scratch coat of portland cement and sand is first applied, followed usually by a straightening coat. Over this the tile are applied in an adhesive coat, either by (1) floating or (2) buttering. In the former case, the adhesive cement is spread over an area in advance of the tile application and the tile forcibly applied to its surface. In the latter, each tile is backed with cement and forced into place separately.

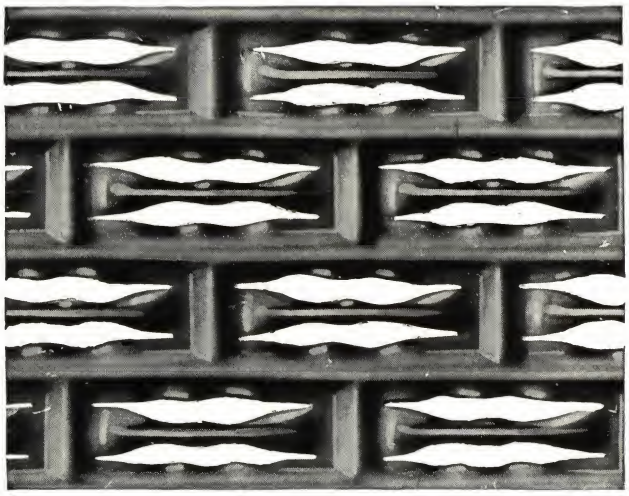
Basis of Preference

Lath Is Self Furring—Applied with trusses against the support (as it always should be), Super-Bostwick "Truss-Loop" Lath furrs out and affords ample key over studs or channels, where single plane reinforcement would give little key. In instances where it is applied over a considerable area of sheathing, as the back of a cubpoard enclosure, the key is adequate for every purpose.

(Below) "Truss-Loop" Installed as Back-up for Tile Fireplace

(Right) Finished Fireplace





Incomparably Stiffer—Weighing 4½ pounds per square yard, Super-Bostwick "Truss-Loop" Lath is more rigid than any lath otherwise adapted for the purpose. Its rigidity is due to a system of raised "trusses" and a double system of stiffening ribs running longitudinally and transversely of the sheet. These insure that the mallet blows of tile setting will produce minimum vibration in the cement coat.

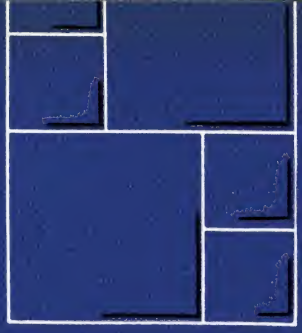
Saves One Day's Time—Super-Bostwick "Truss-Loop" Lath is noted in the plastering trade as the one lath over which "doubling back" with a brown coat over the newly applied scratch coat is good practice. This advantage is highly important in tile applying. The typical tile job is a bathroom of moderate size which can be lathed by one man in a day. Another day suffices for applying the scratch and straightening coats, permitting him to set tile on the third day. In more limited areas, he can often finish lathing and two coats of cement in one day, permitting tile setting on the second day. In either case, he avoids a separate day's attention to the application of the straightening coat.

Construction Hints

Need of Thoroughness—In no lath application is substantial construction more important than in tile work. Supports should be not more than 16 in. o.c.; plenty of nails used in nailed work, ample ties in tied applications.

Carry Around Corners—While shoeing with cornerite will justify butted corners in ordinary plastering, for tiled work it is recommended that lath be bent around all corners.

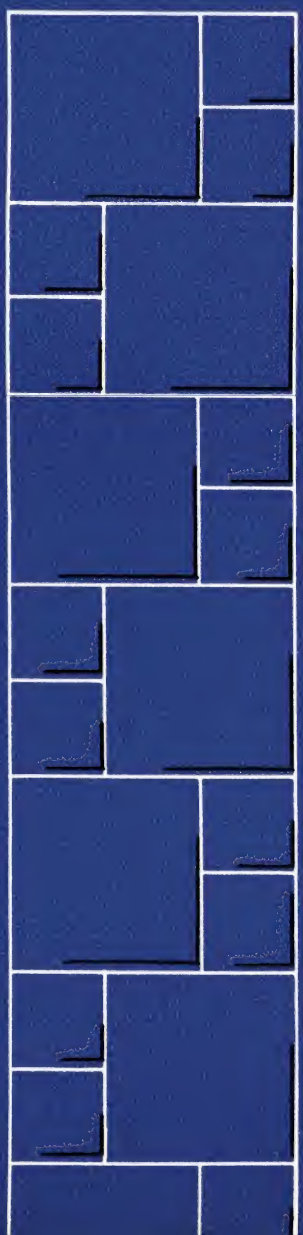
For Tiled Floors—A cement slab laid over matched flooring depressed below the level of the finished floor and protected by tar paper affords an excellent base for floor tile. Reinforcement with Bostwick Niles Expanded lath is recommended, the lath to be pressed into the moist base coat and the straightening coat applied over it.



VEOS

(Trade-Mark Reg., U. S. Pat. Off.)

VITREOUS ENAMEL ON STEEL



Steel Wall Tile

IN ALL COLORS

NEVER FADING COLORS of VEOS STEEL TILE

BLACK •

WHITE •

AQUA •

BISQUE •

IVORY •

JADE GREEN •

GREEN •

ORCHID •

PASTEL SHADES OF UNUSUAL BEAUTY

VEOS Steel Bodied Tile is supplied in a variety of pleasing pastel shades selected by a well known color expert—including black, white, green, jade green, bisque, ivory, aqua and orchid. These soft, delicate tones blend perfectly with any color scheme. Regardless of how delicate the tint may be, a special process of fusing guarantees it to be fadeless, and any room furnished in VEOS today will be just as fresh and colorful 25 years from now.

NEVER CRACKS OR CRAZES

VEOS is as sturdy as the structural steel in Manhattan's skyscrapers. It neither cracks, crazes nor checks. This is due to the fact that vitreous (porcelain) enamel has the same coefficient of expansion and contraction as its steel body.

The special foundation sheet, which provides a full half inch of thermal insulation behind the tile *maintains the tiles themselves at room temperature.* This eliminates the objectionable features of condensation on the wall.

8 BASIC POPULAR COLORS

The eight basic colors, illustrated at right, were chosen for their ability to blend together and with other colors, thus giving a variety of color schemes, strikingly set off by black, white or other colored borders. Many uniquely beautiful effects may be achieved through their skillful handling and arrangement coupled with the application of various sizes of tile . . . from the small 1½ inch dots to the large 6x12 inch sizes. These eight basic colors, plus a selection of new decorative designs (illustrated on page 7), offer unlimited opportunities for working out bathrooms and kitchens of loveliness and practical utility.

ALL OTHER COLORS ARE AVAILABLE

Where architects and decorators require special blending of color for a decorative scheme, and the order is large enough for a special color run, we can supply any variety of shades designated. The Veos Art Department will cooperate in the preparation of sketches suggesting arrangements for unusual wall shapes and designs for any requirement.

Development of VEOS STEEL TILE

The Architect, Builder and Home Owner have only one thing in mind when tiling is specified . . . *the beautiful, smooth and easy to keep clean surface inherent in tile* . . . This surface is specially prepared glass *fused* on the base (clay or steel) at temperatures which virtually *grips* the surface to the base material, thereby insuring permanent beauty and utility.

The only function any tile body performs is *to support the surface and contribute to its permanence.* Therefore, the only fundamental difference between conventional clay tile and VEOS Steel Tile is that VEOS offers a vitreous (porcelain) surface on strong, rust-resisting *steel* while conventional clay tile provides a comparable surface on more brittle, easy to break *clay.*

VEOS Steel Bodied Wall Tile is not new. More than 2,000,000 square feet have been installed during the past eight years for practically every conceivable use . . . Magnificent metropolitan hotels, small country inns, luxurious residences, famous hospitals, ocean going liners, trans-continental trains, gasoline filling station rest rooms and countless other applications now as good as new after many years of rugged service offer convincing evidence of the superiority of VEOS Steel Bodied Tile.

During the past eight years of constant research and development, backed by the resources of one of the nation's largest independent steel companies, VEOS Steel Bodied Tile now brings to the building industry what is conceded to be the *first really basic improvement in the method of tiling for 2000 years.*

Among the outstanding advantages which Architects and Builders will be quick to see and capitalize are . . . tremendous savings in weight (only three and one half pounds per square foot installed, against conventional clay tile of about 16 to 18 lbs.); quick, fool-proof installation on a self-locating foundation sheet which provides structural strength PLUS thermal insulation and sound deadening features never before available in tiling; a variety of pleasing colors to meet modern demands—and A MATERIAL THAT NEEDS ONLY THE EXPERIENCE OF A CARPENTER TO INSTALL.

The

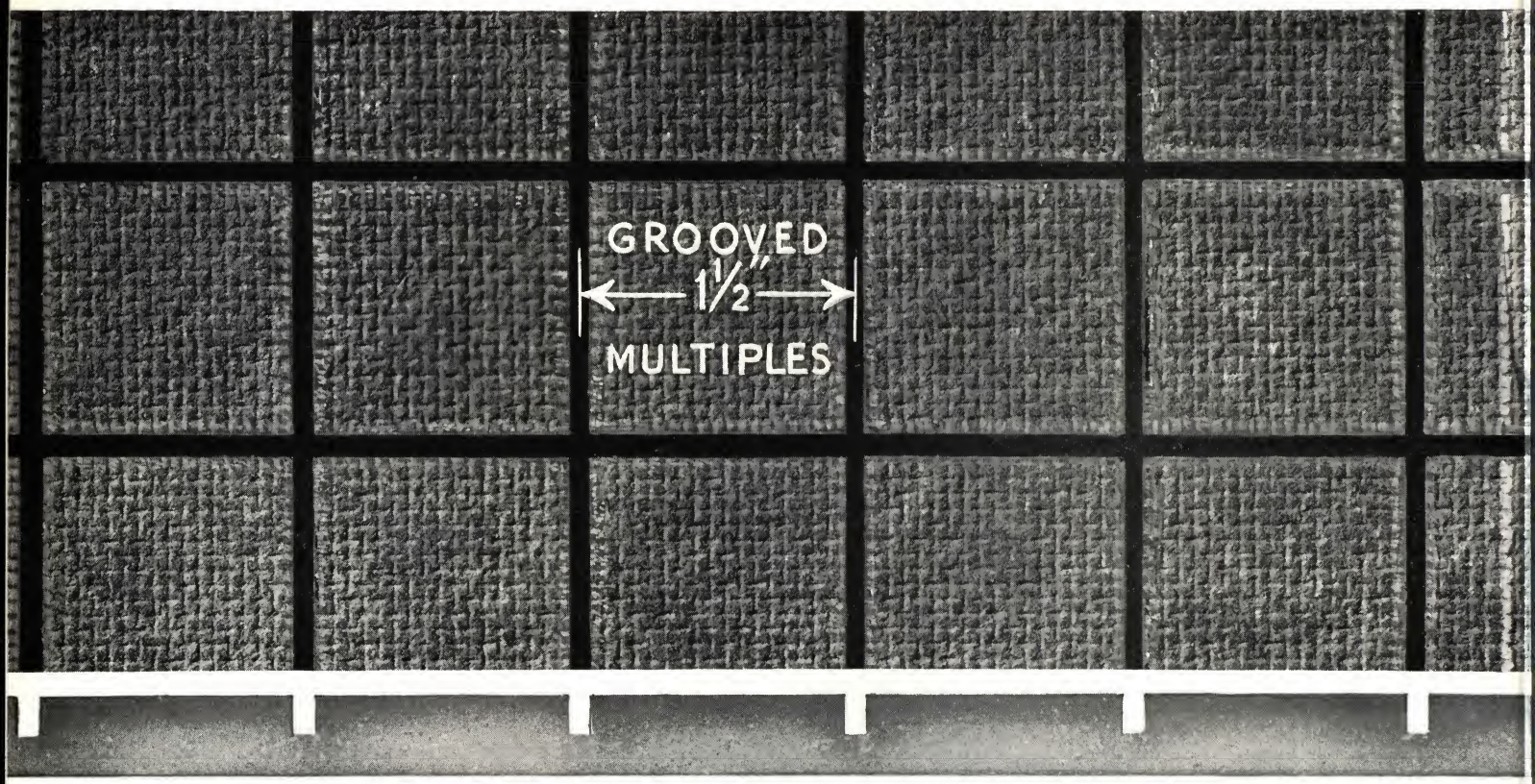
YOUNGSTOWN PRESSED STEEL DIVISION

MULLINS MANUFACTURING CORPORATION

WARREN • OHIO

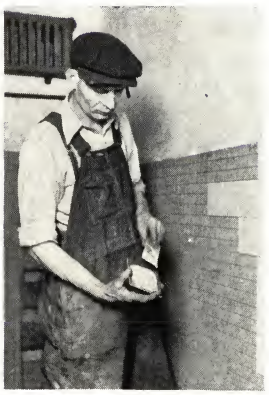
Distributors in all principal cities, see back cover

SIMPLICITY OF INSTALLATION



4 SIMPLE OPERATIONS performed by any carpenter

1. Fastening the foundation sheet to the wall.



2. Applying Veos Glue to the back of the tile.

3. Inserting the tile in self-locating foundation.

4. Grouting and pointing the joints.

THE SELF-LOCATING FOUNDATION SHEET

MATERIALS •

The VEOS Foundation Sheet is a light weight material made of long wood fibres prepared by a special process and compressed under tremendous pressure. Each tile is permanently secured to the foundation sheet, with Veos Glue, a gum base adhesive which clings to a glass surface. It is waterproofed and not affected by ordinary temperatures. Veos Grout is used to cement the tile in place. This is a white hydraulic cement to which is added a special water-proofed glue which also makes it adhere to the glazed surface of the tile. It can be colored to match tiling without losing any of its holding properties.

WATERPROOFED AND VERMIN-PROOFED •

The foundation sheet is waterproofed to withstand complete submersion without injury, if allowed to dry. It absorbs less moisture than any equivalent material available and is GUARANTEED NOT TO WARP, BUCKLE OR SHRINK. It has no nutritive value, and *it is also chemically treated so that vermin cannot eat it and live.*

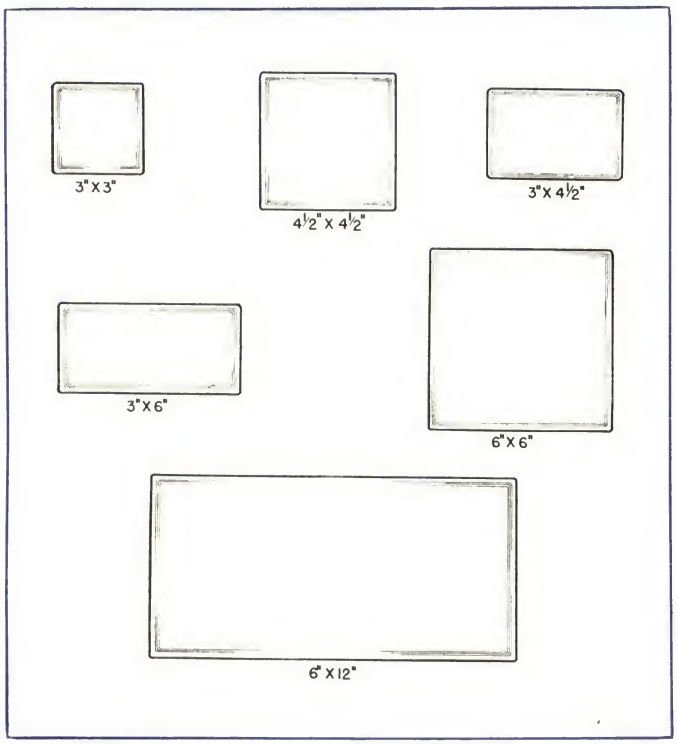
INSULATION •

The Veos Foundation Sheet offers a full ½ inch of thermal insulation, and also has a very definite sound-deadening effect which plays an important part in hospitals, bathrooms and other institutional installations.

PERMANENT •

A VEOS Steel Bodied Wall Tile installation will last as long as the wall to which it is applied.

6 STANDARD SIZES
With Inset Fixtures to Match . . . . .



Veos tiles are manufactured in 3x3, 3x6, 3x4½, 4½x4½, 6x6 and 6x12 inch sizes as illustrated at left. The Youngstown Pressed Steel Company also furnishes complete inset fixtures designed for use with VEOS Tiles and these have special means of fastening to the wall, thus simplifying the installation.

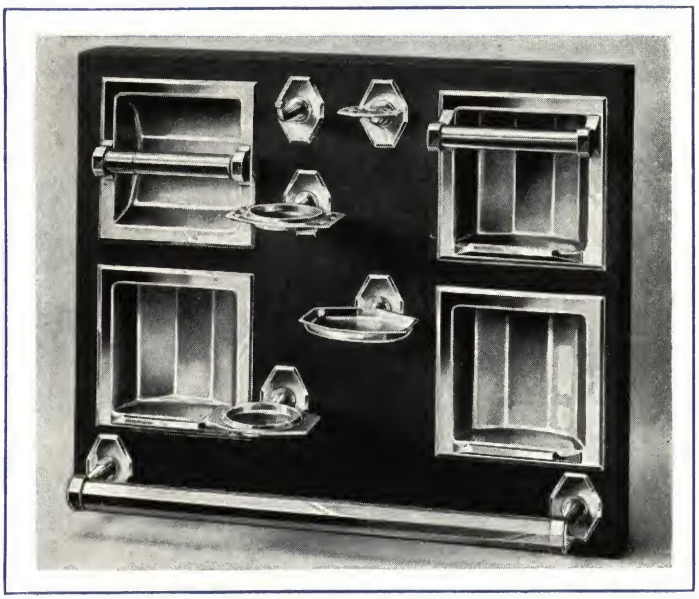
These fixtures are made to fit neatly and quickly into each installation of different sizes of tile. In addition we can supply the attractive group of chromium fittings illustrated below. They are especially made for use with VEOS and are appropriately modern. With colored fixtures to meet all demands for color, coupled with brilliantly designed chromium fixtures the Architect, Builder and Home Owner will find Veos Tile complete in every respect.

SPECIAL SHAPES

The special shapes shown on the following page are made for trim and finishing corners, top caps, bases, showers, etc. More than 36 shapes in all have been perfected to insure quick, attractive and permanent installations.

Veos tile is easily and speedily cut to any size, right on the job, with a special machine developed for the purpose. This machine is available for either AC or DC current, utilizes a small, special formula carborundum wheel which effects rapid, chipless cuts. The cut edges of the tile are covered with a special colorless, rust-proof edging which we supply—and the joint is then filled with grout. THE CUT EDGES WILL NOT RUST. Where cut tiles are exposed, such as around windows, door frames or pillars, we recommend our special colored edging lacquer which we supply, in colors to match Veos tile colors. These special edging lacquers will protect the edges permanently.

Holes can be quickly cut in the tile for pipes and electric wires and flanges are used around the pipes to conceal the cuts.



VEOS SPECIAL INSET FIXTURES

See Page 6 for Special Shapes or Trimmers

VEOS STEEL TILE . . . THE MODERN

1

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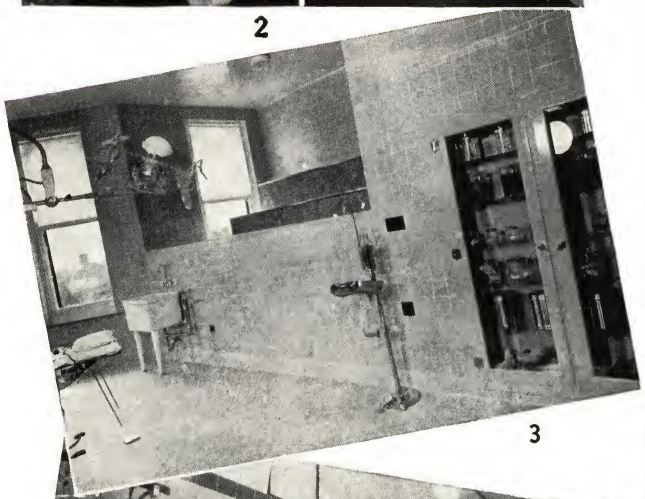

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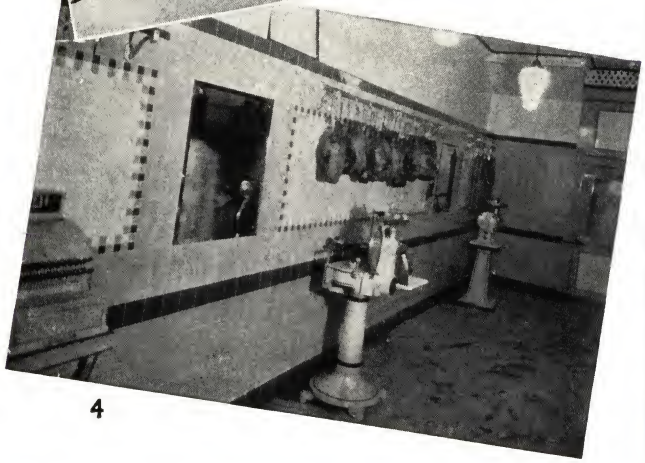


4

A New Standard of Value

Future historians will record that we are now living in an age of steel. The red belching furnaces of a mammoth industry, the vast manufacturing plants that dot the land, the long gray ships that glide silently through the sea, the great straining giants that speed across the land, the long, graceful motored birds of the air—all are visible monuments to steel.

The ponderous, clay-bodied bathtubs of a generation ago have been superseded with porcelain (vitreous) enamel on steel; enamel-on-steel table tops have vanquished the wooden tops of old; the wooden ice box of yesterday has resigned in favor of the compact, easily cleaned porcelain enameled refrigerator of today; the cumbersome cook stove of our fathers has been obsoleted by the present enameled steel ranges; the beautiful enameled steel kitchen cabinet sinks and bath tubs of today are rapidly replacing their heavy-weighted contemporaries.

And now VEOS Enameled Steel Bodied Wall Tile, with its ingenious method of application, commends itself to the progressive buyer as the perfect wall covering. Installed quickly and conveniently by carpenters (who are available everywhere) VEOS will serve to improve living conditions in the small rural markets as well as in the great metropolitan centers by providing a permanent porcelain enameled surfaced wall tile that can be installed over existing walls by a carpenter mechanic . . . without mess, dirt or burdensome weight . . . and at a price strictly comparable with clay-bodied wall tiling.

HOTEL

Before

WALL TREATMENT

Specified by Leading Architects

Veos Steel Bodied Wall Tile has proved its value to the satisfaction of architects and builders everywhere, the names of many of whom will be furnished on request. The practical creators of buildings and authorities on what shall go into them know full well the superiority of porcelain enamel on steel.

One of the major oil companies, knowing that neat, clean and attractive rest rooms always pay big dividends, ordered several thousand rooms to be tiled with VEOS . . . and one official remarked "Veos is the only material that we have ever purchased where there was not one dissenting voice". To the trained man no question of the practicability of Veos Tile arises. Experience has proved that extremes of temperatures, fumes and ordinary abuse will not injure porcelain enamel on steel and that the baked-on colors will ever remain true.

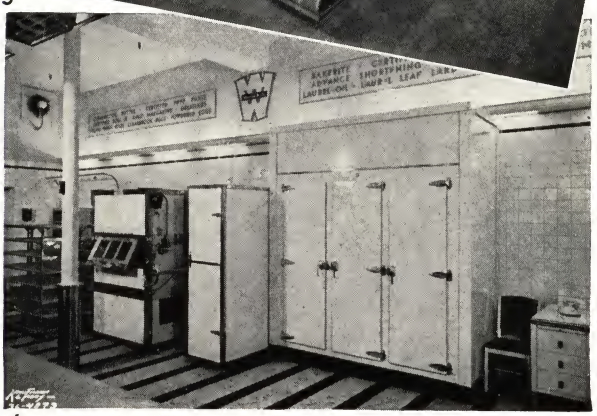
The illustrations on this page show various applications of Veos tiles in residential, institutional and industrial work. There is no better material available at any price and VEOS bids for the tile business strictly on the basis of outstanding merit and proved performance. We shall be glad to furnish samples and further details upon request.

1. Veos Tiles used in a Kitchen on Walls and Ceiling
2. A Gas Station Rest Room Before and After Veos Installation
3. An Operating Room using Veos Tile
4. A Modern Butcher Shop
5. A Vegetable Market
6. A Packing Plant
7. A Dentist Office
8. A Corridor
9. A Residential Bathroom
10. Another Modern Residential Bathroom

BATHROOM

After

5



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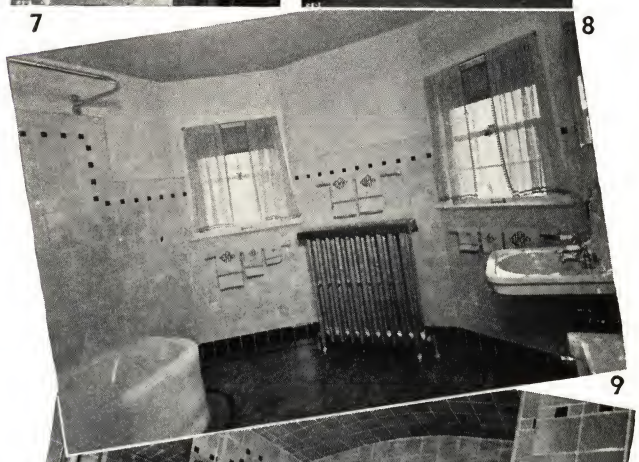

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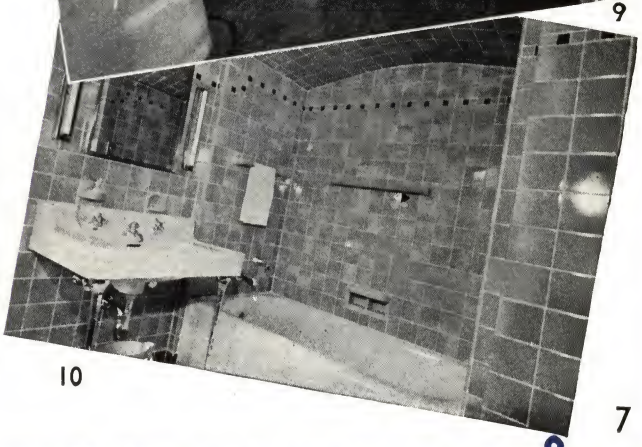


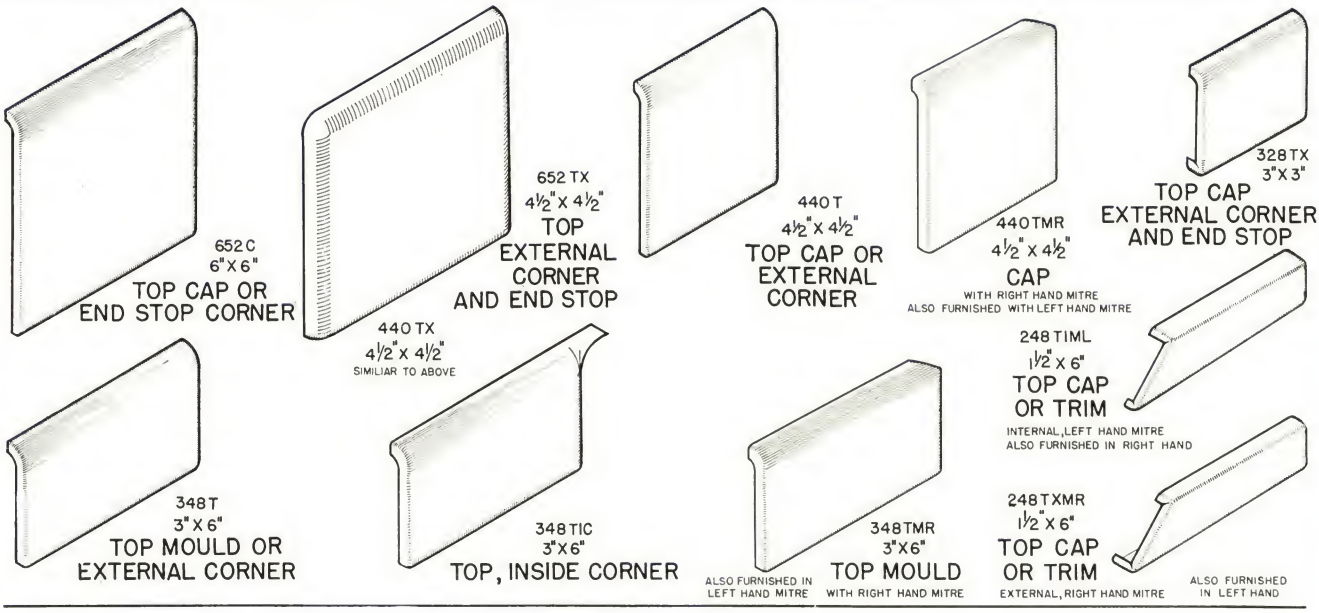
10

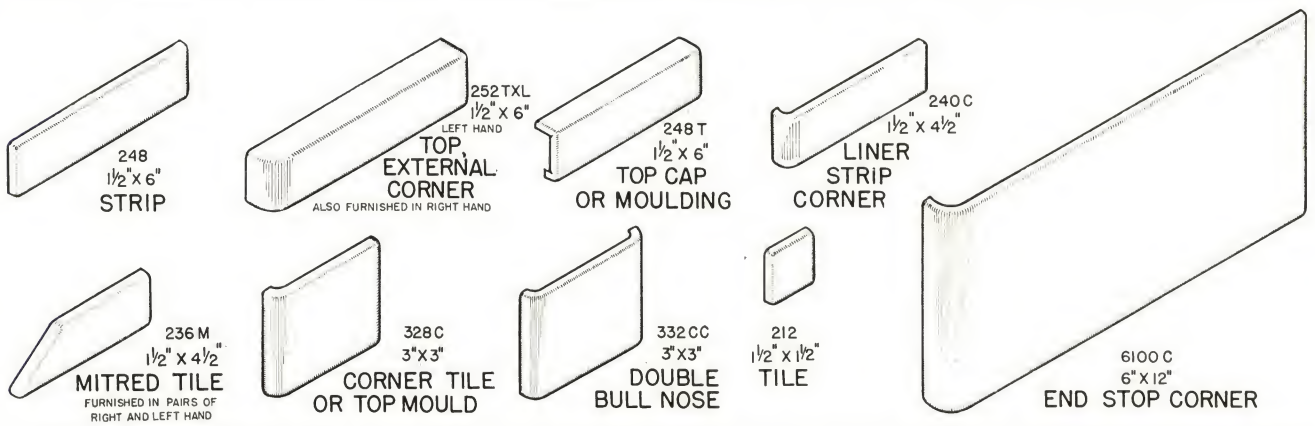
7

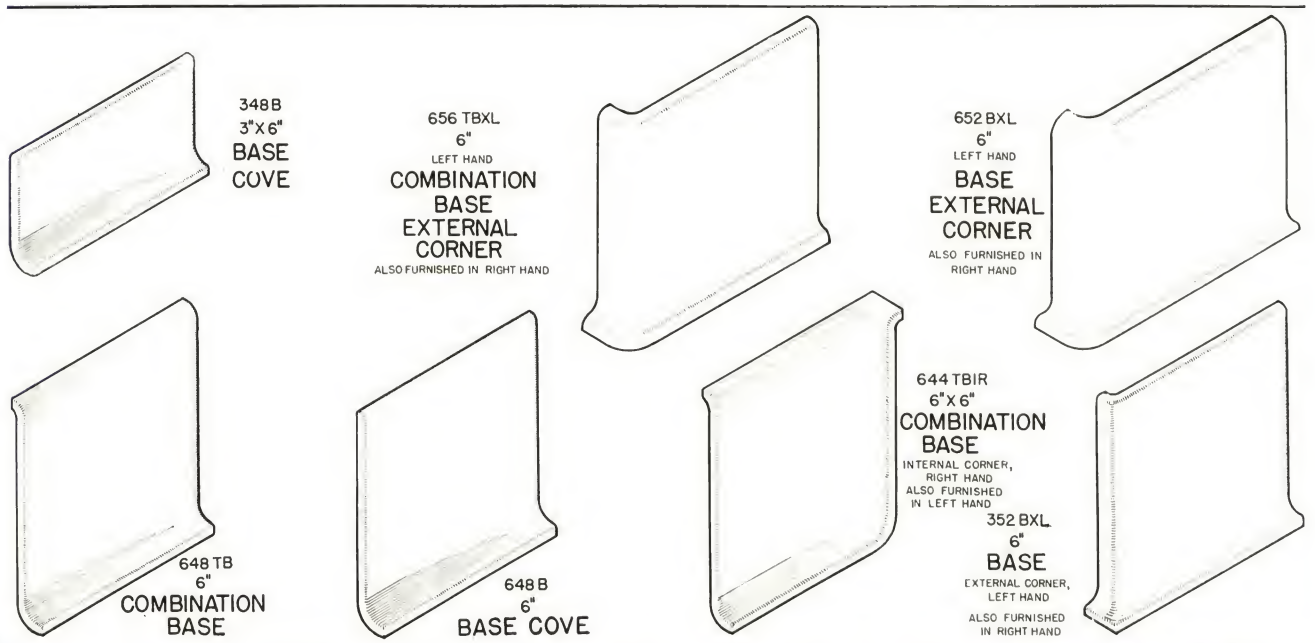
VEOS STEEL TILE

VEOS STEEL TILE
SPECIAL SHAPES OR TRIMMERS

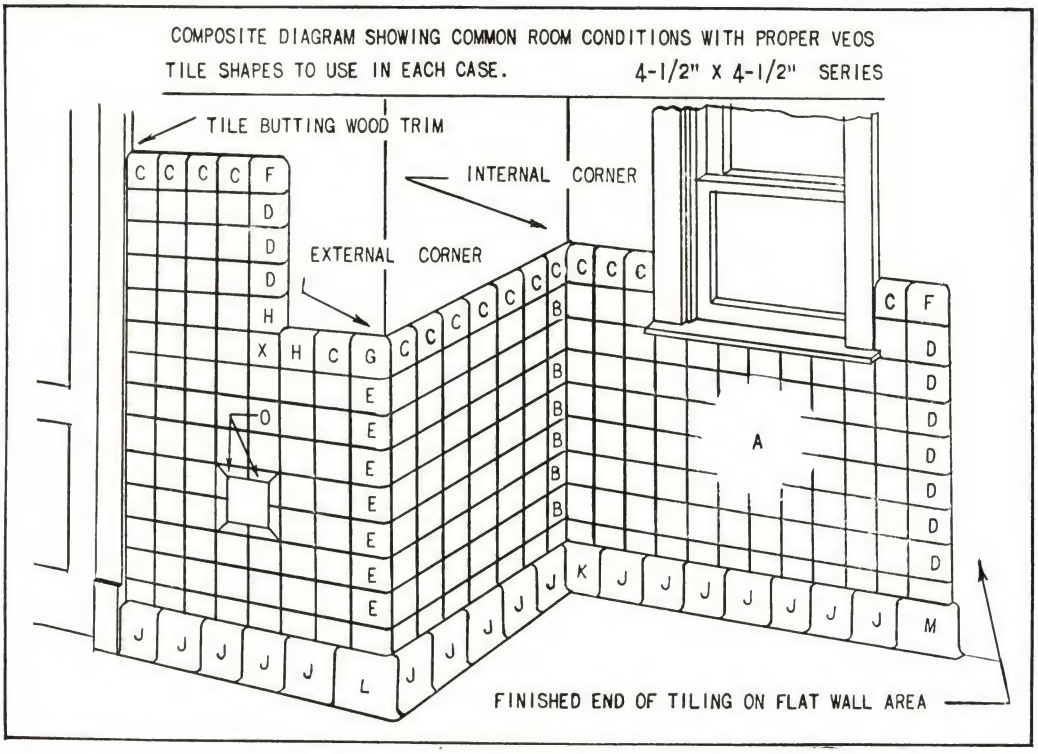
COLORS: Black, White, Aqua, Bisque, Ivory, Green, Jade Green, Orchid







VEOS STANDARD STOCK ITEMS TO MEET ALL ROOM CONDITIONS



KEY TO DIAGRAM LETTERS

A—Field Tile used in tiling the field or "body" areas of all flat surfaces.

B—Fractional Field Tile used principally to prevent cutting Field Tile when tiling into room corners.

C—Top Cap for Field Tile.

D—End Stop for Field Tile.

E—External corners for Field Tile.

This tile, made with radius on one edge (one edge rounded) is a finishing tile, designed to return the tiled field area back to original wall line where the end of the tiling would otherwise be exposed.

F—Top Cap End Stop.

G—Top Cap External Corner.

H—Top Cap Mitred Corners — left and right mitre. Always used in pairs and in connection with carrying tile to a higher or lower level.

J—Combination Base Tiles, coved top and bottom. Due to one-half inch cove at top edge of this shape, the base extends out one-half inch from the plane of the Field Tile.

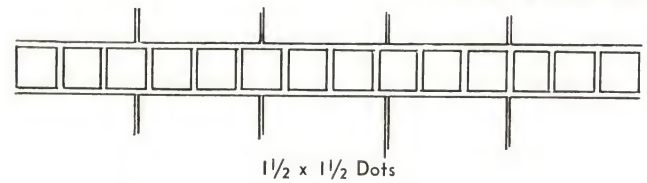
K—Combination Base Internal Corner—left or right. Used in connection with base when making internal corner turn to left or right.

L—Combination Base External Corner — left or right. Used in combination with base to make external corner turn to left or right.

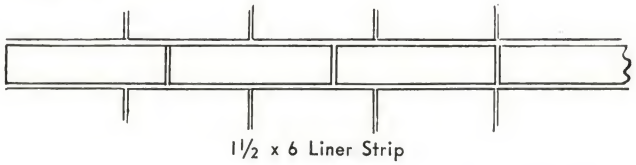
M—Combination Base Stops. Same as Combination Base External Corner but may be used as Combination Base Stops when desired.

O—Mitred Tile, used in pairs. For installing Veos recessed bathroom fixtures (see page 11).

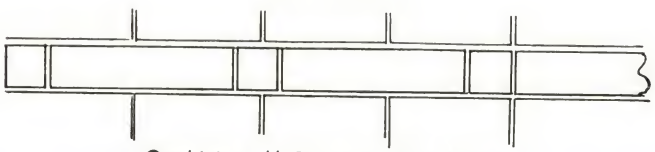
SUGGESTED BORDER TREATMENTS



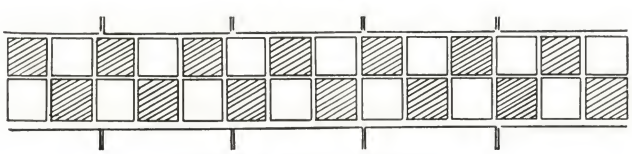
1½ x 1½ Dots



1½ x 6 Liner Strip



Combining 1½ Dots and 1½ x 6 Liner



Two Row Border 1½ Dots

METHODS OF INSTALLATION
ARCHITECT'S SPECIFICATIONS . . . . .

SCOPE OF WORK

(1) All walls and partitions throughout the following rooms and areas shall be covered with VEOS Steel Wall Tile as manufactured by the Youngstown Pressed Steel Company, Warren, Ohio:—

(2) Tiles shall be (3″ x 3″, 3″ x 4½″, 3″ x 6″, 4½″ x 4½″ 6″ x 6″ and 6″ x 12″) of colors selected by the Architect; shall extend from the floor to the heights indicated on the drawings; and the Contractor shall provide all caps, base, corner angles and special shapes required.

PREPARATION OF SURFACES

Note: Use 3 and 4 with 10 for stud framed walls and partitions.

(3) All studs forming partitions and walls which are to be tiled shall be straightened by kerfing and wedging and shall be furred horizontally back of the title with continuous 1″ x 2″ white pine strips set 6″ on centers and rigidly secured in place with two 10d nails at each end and at each bearing. Joints in furring strips shall occur at bearings only and shall be staggered.

(4) Where built in fixtures occur the Contractor shall provide and install a rough frame of same material as the studs and with horizontal members framed between studs and rigidly spiked thereto.

Note: The 5 to 7 with 10 for tile and masonry walls and partitions.

(5) Where VEOS tiling is to be applied on tile, brick or other masonry surfaces the contractor shall provide a rough coat of plaster full height of the tile wainscots.

(6) Temporary continuous grounds shall be provided along the top and bottom and the plaster coat screeded with a straight edge and finished smooth to a true plane so that the foundation sheets will be flat and plumb and present a plane surface when applied and so that all corner angles will be plumb and true throughout their height.

(7) If the Contractor so elects he may omit the rough plaster coat and provide 1″ x 2″ continuous white pine nailing strips spaced 6″ on centers horizontally and rigidly secured by 10d steel hardened nails full driven not over 10″ apart.

Note: The 8 to 10 for modernization work.

(8) Where VEOS tiling is to be applied over existing plastered surfaces the contractor shall examine the existing surfaces to insure that they are in true planes and plumb and that corners are plumb and in true angle throughout their height.

(9) The Contractor shall do all necessary cutting and fitting of existing lath and plaster, removing all loose, weak or otherwise damaged portions, patching and replacing the plaster as necessary to provide surfaces in true planes, plumb out of wind and ready for the reception of the foundation sheets.

(10) All furring strips shall be shimmed or otherwise applied so as to have solid bearings and shall be accurately positioned so that the foundation sheets will be flat and plumb and present a plane surface when applied and so that all corner angles will be plumb and true throughout their height.

APPLICATION OF FOUNDATION SHEETS

(11) All foundation sheets shall be so laid out that, wherever possible, no tiles less than half full size shall occur. For heights indicated, courses shall be maintained full to produce the nearest attainable height equivalent to less than one half a tile course to avoid cutting of tiles which would otherwise be necessary.

(12) Where borders, lines, patterns, panels or other effects are a part of the work the foundation sheets shall be properly spaced to accurately reproduce the designs required.

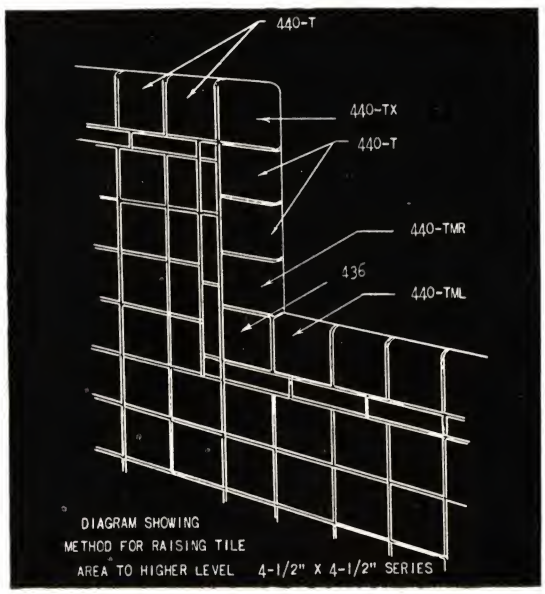


DIAGRAM SHOWING METHOD FOR RAISING TILE AREA TO HIGHER LEVEL 4-1/2" X 4-1/2" SERIES

(13) All foundation sheets shall be applied so that all horizontal tile joints will run level and in unbroken lines throughout the entire area.

(14) The bottom of all sheets shall be placed on a level line ¼″ above the established finish floor line and shall be shimmed as necessary to present a true plane surface entirely out of wind.

(15) The first foundation sheet shall be started ⅛″ away from a door opening or an external corner and shall be run directly into the corner of the room.

(16) The foundation sheet shall be applied to the other wall coming out of the corner by being started ⅛″ away from the first sheet and being run directly into the corner. A similar space of ⅛″ shall be left at all other internal corners and the sheets shall be cut back ⅛″ from all external corners, door, window and other openings as well as from all other fixed vertical surfaces, space of 3/16″ shall be left at all joints between adjacent sheets.

(17) Special reinforcing strips or channels shall be provided at all external corners. One side of these strips shall be securely fastened to the back of the foundation sheets and the other side shall accurately bend over the corner, project onto the intersecting wall surface and be securely nailed thereto with 10d nails spaced 10″ apart vertically.

(18) All foundation sheets shall be shimmed as necessary and so installed as to be plumb and in true planes with all corners exactly plumb and all exposed surfaces entirely out of wind.

(19) All foundation sheets shall be accurately cut for built in fixtures, pipes, conduit and similar items, allowing a space of ⅛″ as specified. Sheets shall be accurately scribed to all irregular surfaces.

Note: Omit 21, 22, 23 and use 19 with 24 for modernization work where foundation sheets are to be applied over existing lath and plaster over wood framing.

(20) All foundation sheets shall be cemented in place by spot glueing same in from six to eight places on the back with VEOS glue and shall then be securely nailed in place with galvanized or cement coated large head roofing nails spaced 12" O.C. vertically driven through into existing studs.

Note: Omit 22 and use 21 with 23 and 24 for foundation sheets applied and plaster over masonry construction.

(21) All foundation sheets shall be cemented to the plaster by spot glueing same in six or eight places on the back with VEOS glue and shall then be securely nailed in place with large head hardened steel nails.

(22) All foundation sheets shall be securely fastened to the backing with galvanized or cement coated large headed roofing nails.

(23) Nails shall be driven 12" on centers vertically on rows 12" on centers horizontally, each row being staggered 6" with respect to the preceding one.

(24) Nails shall be full driven but not so as to crush in the surface of the sheets. No nails shall occur within 12" of the edge of external corners on the wall surface where metal strips are attached to the back of foundation sheets.

APPLICATION OF VEOS TILE

(25) Each VEOS tile shall be uniformly coated on the back by a spatula or flat stick with a layer of VEOS glue and shall be applied to the foundation sheet by pressing firmly into place with a slight side movement so that the entire space between the tile and the board is filled with glue.

(26) The space between the bottom edges of the foundation sheets and the finish floor, the space between the top cap and the top edge of sheets, the space at all external corners, as well as all open spaces between the tile itself and the foundation sheet due to the curvature of the tile, shall be filled with grouting cement mixed thoroughly and fairly thick.

(27) Before installing the tiles, the Contractor shall measure up the spaces, ascertain what cutting of tiles is necessary and shall arrange as far as possible so that all cut tiles shall occur in inconspicuous places.

(28) The base tile shall be set first then the top cap and the field tile shall then be laid from the cap down.

Note: Use 29 only for 3" x 6" tiles.

(29) Tile shall be laid with all vertical joints in any one course breaking with respect to those in the course next below.

Note: Use 30 only for 3" x 3" and 4½" x 4½" tiles.

(30) Tile shall be laid with unbroken vertical and horizontal joints.

(31) All fixtures shall be set and rigidly secured in place before laying tiles.

Note: Use 32 where masonry walls occur.

(32) The Contractor shall cut recesses in walls for reception of the built in fixtures and shall attach the fixtures rigidly in place with expansion or toggle bolts before laying the tiles.

(33) The Contractor shall cut all tiles accurately to size with an approved electric driven abrasive disc machine and in such a manner as not to mar or chip the surfaces and shall cover all cut edges with VEOS edging material before applying the tiles.

(34) Holes for passage of pipes, conduit, etc., shall be accurately cut to size so that the regulation plate, collar or covering will overlap the tiles on all sides.

(35) The Contractor shall provide VEOS cement, shall mix and prepare same as directed by the manufacturer and shall grout all tiles carefully in place using rubber gloves and rubbing the grout into all joints so as to thoroughly fill same and so as to force the grout into the groove behind the flanges of the tile.

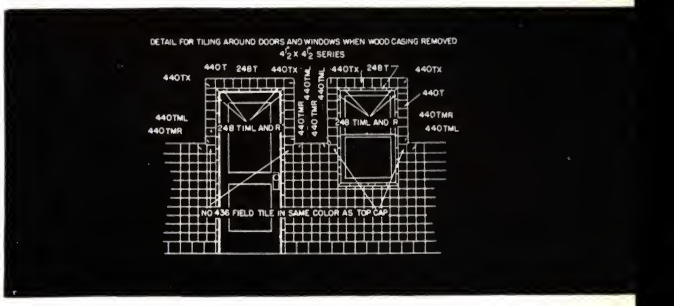
(36) Excess cement shall then be removed with a rubber squeegee or wiper and the face of the tiles carefully sponged clean with water.

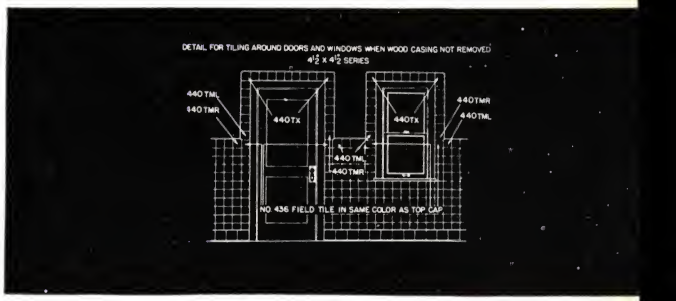
(37) Joints shall then be tooled with a special round nosed tool with rounded point slightly larger than the joint width.

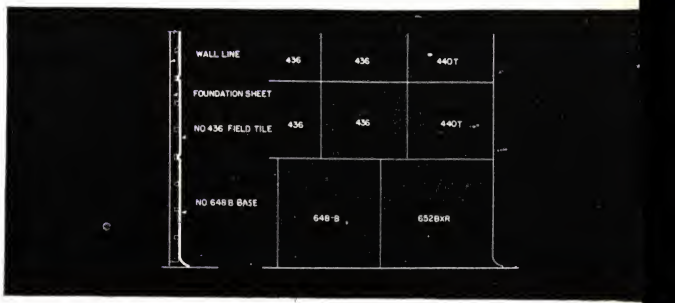
(38) Excess grout shall then be carefully removed with water and sponge so as not to disturb the joint.

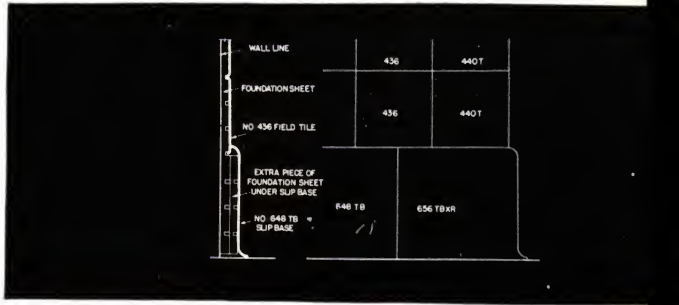
(39) At completion the surfaces of all tiles shall be left clean.

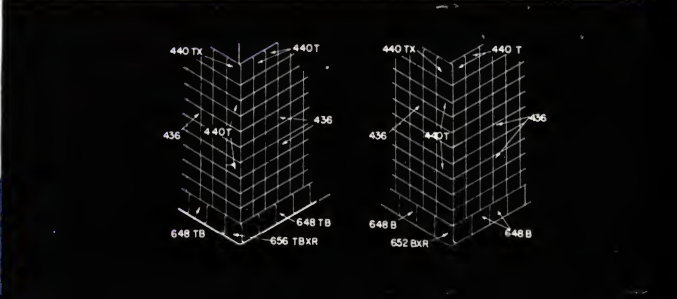
(40) In freezing weather tiles shall not be set on foundation sheets nor grouted nor shall scratch plaster coats for foundation sheets be applied in unheated portions of the building.











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VEOS

(Trade-Mark Reg., U. S. Pat. Off.)

VITREOUS ENAMEL ON STEEL

STEEL WALL TILE

Veos Steel Bodied Wall Tiling is sold only through installing contractor dealers, who guarantee the quality of their workmanship to the entire satisfaction of the purchaser. If you do not know the Veos dealer in your trading center look for him in the classified telephone directory under "Veos Steel Wall Tiling," or write us for his name. If there is no dealer in your community perhaps you will be willing to recommend the name of the individual or firm whom you think is best qualified to serve the demands of your vicinity.

YPS

A product of

THE YOUNGSTOWN PRESSED STEEL DIVISION
MULLINS MANUFACTURING CORPORATION
WARREN, OHIO

DISTRIBUTORS IN ALL PRINCIPAL CITIES INCLUDING

NEW YORK	WASHINGTON	DETROIT	MINNEAPOLIS	HOUSTON
BOSTON	BALTIMORE	CLEVELAND	ST. LOUIS	DALLAS
PHILADELPHIA	PITTSBURGH	CHICAGO	KANSAS CITY	ATLANTA

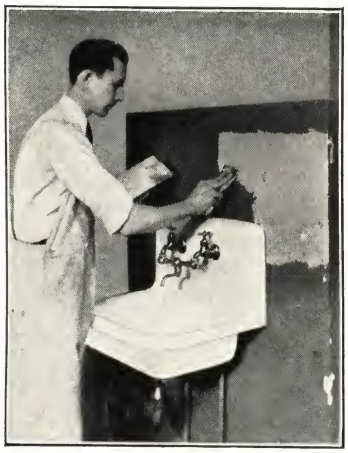
NEW ORLEANS DENVER

SANIMETAL TILE CORPORATION

Manufacturers of Sanimetal Tile for Walls and Ceilings

101 Park Avenue

NEW YORK, N. Y.



The First Step
Applying the special oil cement over surface to be tiled

The Second Step
Pressing the individual tile blocks into position

The Third Step
Cutting or bending the tiles to fit around obstacles

DESCRIPTION

Each tile is separate. (Not a sheet or panel tile.) Made from 28 gauge steel, tin coated on both sides. Surface of tile is finished with three coats of durable baked-on enamel.

SIZES AVAILABLE

Tile: 4¼″ x 4¼″, 6″ x 6″, 3″ x 6″.
Borders: 12″ x 2¼″, 9″ x ¾″, 3″ x 2¼″.
Corners: 12″ long (on installation only the bead of corner is visible).
Base: 6″ x 6″, coved at bottom.
Shipping weight approximately ¾ lb. per sq. ft., packed in cartons.

COLORS

Plain: white, ivory, black, red.
Mottled and two-toned: Peach, green, pearl, orchid, blue.
Tiles and accessories are available in all standard colors.

METHOD OF APPLICATION

Cemented onto any fairly smooth and even, old or new, painted or unpainted wall and ceiling surface, using as an adhesive SANIMETAL Oil Cement, which is a putty-like mixture.

Sanimetal Oil Cement is supplied by SANIMETAL TILE CORPORATION in containers of 5, 10, 25, 50 and 100 lbs. One lb. of Sanimetal Oil Cement is needed for every 2½ sq ft. of tiling.

OUTSTANDING ADVANTAGES

(1) Exact resemblance to clay tile.
(2) Easily installed at small labor cost.
(3) In remodeling work, the wall need not be torn out, nor plumbing fixtures reset.
(4) On new work, economically erected walls or wallboards are suitable as background.
(5) Becomes permanent part of wall.
(6) Sanitary (no space behind it for insects to breed).
(7) Extremely durable—will not craze, crack or chip.
(8) Economical (cost of installation is only about 60% of clay tile cost. All colors the same price).

VARIETY OF USES

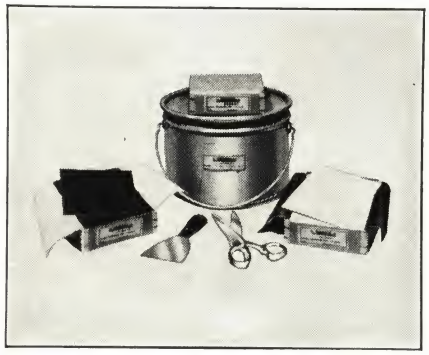
Being a metal product, Sanimetal Tile is not suitable for floors, but as a wall and ceiling surface it can be used advantageously wherever clay tile can be used. The installation will be very pleasing in appearance and the work firm and durable. Each tile is firmly cemented. Can be installed over any fairly smooth and even plaster, wallboard, cement wall, etc., and even on glass.

SHORT SPECIFICATION

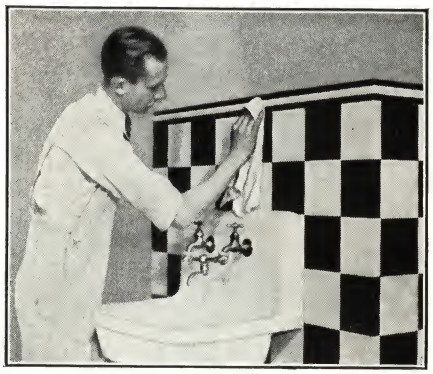
The areas indicated on plans shall be finished with Sanimetal Tile (state size and color) as manufactured by the SANIMETAL TILE CORPORATION of 101 Park Ave., New York, N. Y.

Surface Preparation—Surface to receive Sanimetal Tile should be dry, smooth and even. If not already painted, it should be sized with a cheap grade of shellac.

Application—Apply Sanimetal as per the directions of the SANIMETAL TILE CORPORATION, which directions become part of this specification.



Materials and Tools Required
These comprise the tiles, oil, cement, a pair of scissors and wide putty knife. This illustration shows enough tiles and cement for a 105 sq. ft. installation



The Final Step
Removing the cement from the surface of the finished wall—done by simply wiping the surface with a dry cloth

MEMORANDA

CEMENT FLOOR COMPANY, INC.

Cement Waterproofing—Emulsion Floors
300 Madison Avenue, NEW YORK, N. Y.

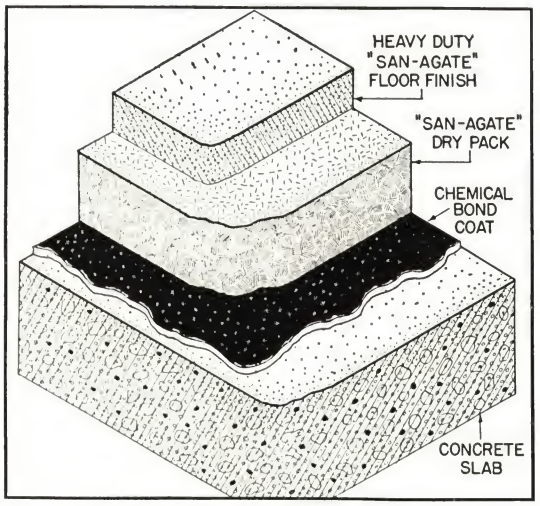
HEAVY DUTY "SAN AGATE" FLOOR FINISH

A Heavy Duty Floor That Has Proved Its Superiority

This unique heavy duty floor —using an entirely new theory of floor fabrication—is finding wide acceptance in railroad stations, factories, warehouses and similar locations requiring a hard, non-slip surface that will remain impervious to wear and will not shrink.

The "San-Agate" Floor gives a sound, natural hardness —and obtains this hardness *without troweling.*

In addition, because the "San-Agate" Floor has no tendency to shrink, it does not require expansion joints.



Cross-section of Heavy Duty "San-Agate" Floor
Showing the homogeneous structure of this new floor—free of air and water. Patent Pending.

Natural Hardness Without Troweling

The ability of the "San-Agate" Floor to give a natural hardness—without requiring the troweling operation—is due to its scientific control of the hydrostatic action. For the process of preparing and laying this modern floor insures the total elimination of air and water from the "San-Agate" structure. The cross section above gives a quick picture of the solid homogeneous build-up of "San-Agate"—and shows why it leaves no space for air or water.

How the "San-Agate" Floor Is Built

The fabrication of a heavy duty "San-Agate" Floor is far from complicated and requires a comparatively short time to lay and set.

Step 1.—All dirt and foreign material are scrubbed from the rough sub-floor with large push brooms. Water is first flowed over the floor to float the dirt and facilitate scrubbing.

Step 2.—A specially prepared chemical bond coat is then applied to seal the pores and provide adhesion. The coat is spread by a stiff push broom to form a thin protective seal over the sub-floor. (See Fig. 1.)

Step 3.—The "San-Agate" Dry-Pak—the essence of this "dry" floor—is next applied in sufficient quantity. It is screeded and rammed and can be walked on two minutes after laying. (See Fig. 2.)

Step 4.—The "San-Agate" Heavy Duty Top is then flowed on Made of twelve aggregates, this top is unexcelled in hardness and wear-resisting qualities. Its special consistency makes troweling unnecessary.

Step 5. Optional—The finished floor is then ruled with a ruling machine in any pattern desired. Because the "San-Agate" Floor has no tendency to shrink, this step is not necessary. For purely decorative reasons, however, it is often included. (See Fig. 3).

Photographs of illustrations below were taken during the installation of a Heavy Duty "San-Agate" Floor on one of the platforms of the new Pennsylvania Railroad Station, Newark, N. J.

Specifications

Over concrete floor surfaces left rough and broom clean by builder, Heavy Duty "San-Agate" Floor to be installed by CEMENT FLOOR COMPANY, New York City.

(B) Fig. 1. After the sub-floor is scrubbed, the Chemical Bond Coat is brushed on.

(C) Fig. 2. Then the special Dry-Pak is applied, screeded and rammed. Can be walked on in two minutes.

(D) Fig. 3. After the Heavy Duty Top (applied without troweling) is dry, the "San-Agate" Floor is easily ruled.

KALMAN FLOOR COMPANY

INCORPORATED

NEW YORK OFFICE
110 East 42nd Street
ATLANTA

CHICAGO OFFICE
2013 Ferdinand Street
LOS ANGELES

THE KALMAN FLOOR—A GRANOLITHIC CEMENT FINISH FLOOR TOPPING

Laid by the Kalman Floor Company Using the Kalman Absorption Process

The Kalman Absorption Process

A practical method of installing, on a commercial basis, a theoretically correct, low water ratio concrete topping, producing a hard, wear-resisting floor, free from distintegration and dusting, and of maximum density, evenness of texture and unexcelled durability.

The Company

THE KALMAN FLOOR COMPANY has specialized and pioneered in cement finish floors for over fifteen years and maintains a nation-wide organization. Each job is installed by a crew of our own skilled workmen, under direct supervision of an experienced superintendent. Every phase of the work is handled by our own organization, including the preparation of the slab, the selection of materials, the complete floor installation, and the final curing.

Adaptability

Kalman Floors are the ultimate in cement floors for heavy duty service and are used in warehouses, power plants, railroad terminals and practically every kind of building for industrial purposes.

Kalman Floors have been installed in an exceptionally wide range of institutional buildings, including insane asylums, jails, police stations, hospitals, also schools, universities, stores, commercial and other types of buildings where a highly polished, sanitary floor of pleasing appearance is necessary.

Cross Section of Kalman Floor Topping

Decorative Floors—Bases, Dadoes, Etc.

Kalman Floors can be laid in any standard cement color and, because of the water control feature of the Kalman Process, a rich, deep and uniform coloring is obtained.

Sanitary bases, curbs, stairs and dadoes are formed with the floor and can be installed in colors to match, or in contrasting colors.

Kalman Methods Insure Positive Results

Adhesion to Sub-base—A cement finish will adhere to a concrete surface only when that surface is free from laitance and otherwise clean and roughened. Our own skilled workmen prepare the concrete slabs the same day they are poured.

Materials and Mixing—The materials used in the cement finish, together with the care taken in mixing, are important in determining the lasting quality of the floor.

Aggregates used in Kalman Floors are subjected to an analysis in our laboratory. Cleanliness, hardness and size must be consistently uniform and in accord with exacting standards. By granulometric and colorometric tests we make sure that the materials forming our finish are adequate and dependable.

Where floors are to be subjected to excessively heavy traffic, we recommend the fortification of such floors by the use of harder and tougher grades of stone aggregates, which will be transported from other points if not available locally.

Control of Water Content—The ultimate strength of portland cement concrete is largely influenced by the proportion of water present during the setting of the cement. Positive control of water content is an all-important requirement of dependable cement floors. It is a well established fact that the least quantity of water required to produce reasonably workable concrete is well in excess of the quantity most favorable from the standpoint of ultimate strength.

By the Kalman Adsorption Process, a definite controlled removal of excess water is achieved so that twenty minutes after the floor topping is placed it is sufficiently dry and so firm that it will support a man's weight without foot impression.

Ideal Concrete Conditions Obtained—This *water absorption control* procedure is one of the outstanding features in the laying of Kalman Floors, and it is of the utmost importance for three separate and very significant reasons:

First: Sufficient water has been used in the mix to start full hydration of every particle of cement, also assure a dense mix and thorough coating of the aggregates with the cement. During the *absorption process* the topping is further densified and preshrunk.

Second: The water content is reduced to that desirable minimum under which condition the cement will set most favorably and develop its maximum strength, producing a concrete of highest possible compression value.

Third: The surfacing operations —compacting and troweling—when delayed until excess water has been disposed of by evaporation, are inevitably damaging to the delicate crystalline formations created by the setting of the cement.

By controlled removal of free water, the Kalman finish is brought to a proper condition of stiffness, within 10 to 30 minutes after spreading, thus permitting the full completion of the surfacing process in advance of the critical stage in the setting of the cement so as to remove all danger of loss of surface quality through disturbances of the crystallizing process.

The above factors assure a toughness and resistance to disintegration far above that developed in a concrete allowed to set in the ordinary way.

Compacting and Troweling—Surface smoothness in cement finish offers permanent resistance to wear only when the body of the finish beneath the surface is uniformly dense and free from voids.

Our finish is compacted by means of heavy, electrically operated disc floats. This mechanical compacting, combined with the inherent advantages of the Kalman Absorption Process and the final surfacing, by hand trowels, produces a smooth, hard, impervious surface of uniformly fine texture without tool markings or blemishes.

Experience and Organization

A factor of great importance involved in the installation of cement floors is the skill and knowledge of the men doing the work. Materials and methods require successful application.

The Kalman national reputation for postive results has been established by a skilled and experienced organization which has been built up over a period of a great many years.

The KALMAN FLOOR COMPANY is maintaining year after year a complete organization, including a field force of superintendents, foremen, mechanics and workmen, thoroughly trained and experienced in the laying of Kalman cement floors.

Guarantee

The Kalman Floor, produced in keeping with the foregoing principles, is a realization of the ultimate in quality, durability and appearance inherent in cement finish. It is a wearing surface of maximum toughness, minimum porosity and superior performance under the most severe conditions.

Kalman Floors are fully guaranteed in every respect.

INSTALLING A KALMAN FLOOR

No. 1 No. 2 No. 3

No. 4 No. 5 No. 6

No. 7

No. 1: Pouring concrete topping
No. 2: Screeding off
No. 3: Covering wet concrete topping
No. 4: Placing sand-cement drying mixture on top of burlap
No. 5: Removing drying mixture
No. 6: Machine compacting
No. 7: Hand floating and steel troweling

SPECIFICATIONS FOR KALMAN PROCESS CEMENT FINISH FLOORS

Scope—All concrete floor surfaces indicated on the plans, or herein specified to be cement finish, shall be finished by the Kalman Process. This work shall be done by the KALMAN FLOOR COMPANY, 110 East 42nd Street, New York, N. Y., or nearest District Office, who will furnish all necessary materials, equipment and labor for full and complete performance of the work in accordance with the following specifications.

General—The floor surfaces to be finished shall be turned over to the KALMAN FLOOR COMPANY by the general contractor, broom-cleaned, free from all oil, paint, grease, plaster, mortar or other foreign material, and shall be clear of all stored material, equipment, or other obstructions. The surfaces shall be reasonably true and uniformly even to a level approximately ¾ in. below the required finished floor level.

During the laying of floor finish by the KALMAN FLOOR COMPANY all openings in exterior walls adjoining the area being finished shall be closed and kept closed, and when heat is necessary to keep the interior temperature well above the freezing point, such heat shall be provided by the general contractor without cost to the KALMAN FLOOR COMPANY.

Preparation of Concrete Surfaces—Whenever possible within 24 hours after concrete has been poured, the KALMAN FLOOR COMPANY shall remove laitance and scum from the surface to be finished, leaving the surface clean and rough to insure uniform and sufficient bond when finish is applied.

When surfaces to be finished are inaccessible prior to final set of concrete, laitance and scum shall be removed by the KALMAN FLOOR COMPANY by mechanical chipping and scouring of the surfaces.

Materials and Mixing—Materials for cement finish shall consist of:

Portland cement, complying with the standard Specification for Portland Cement as last adopted by the American Society for Testing Materials.

Fine aggregate, consisting of clean sand or screenings from hard crushed stone or gravel, free from injurious quantities of clay, loam or vegetable matter, using only such portions as will pass a No. 4 sieve.

Coarse aggregate, consisting of clean, hard gravel, or crushed stone, free from injurious quantities of clay, loam, or vegetable matter, ranging in size from ¼ to ½ in.

The mix for finish shall be one part portland cement, one part fine aggregate, and one and three-quarter parts coarse aggregate, mixed with sufficient water to produce a workable flowing mixture.

Laying of Finish—Screeds to true level of finished floor surface shall be set by the KALMAN FLOOR COMPANY to established grade.

The concrete surface shall be wet at the time finish is laid.

Immediately before laying finish, the concrete surface shall be treated with neat cement grout, applied in a thin coat thoroughly brushed and worked into the surface.

Control of Water Content—As soon as the finish has been spread and rodded to true level, the excess water shall be withdrawn by the KALMAN ABSORPTION PROCESS. When all free water has been absorbed the dryer shall be removed and returned to the mixer to be incorporated in further finish.

Compacting and Troweling—Immediately after removal of dryer the exposed finish shall be thoroughly compacted, using motor driven floats of disc type.

This compacting shall be followed by troweling operations as required to bring the finish to a smooth, hard impervious surface, free from marks and blemishes.

Curing—Twenty-four hours after final troweling, the finished surface shall be thoroughly saturated with water and kept in saturated condition from 7 to 14 days thereafter.

Use of Floor—For at least five days following completion of troweling, use of the floor shall not be permitted, and thereafter only light use shall be permitted for an additional five-day period.

A PARTIAL LIST OF NATIONALLY KNOWN USERS OF KALMAN FLOORS

For Whom Two to Over Fifty Repeat Installations Have Been Made

American Woolen Company
Chrysler Motors Corporation
Commonwealth Edison Co.
Continental Baking Company
DuPont de Nemours Company
Firestone Tire & Rubber Co.
First National Stores
General Motors Corporation
General Foods Corporation
Great Atlantic & Pacific Tea Co.
Illinois Steel Company
Lever Bros. Company
Libbey-Owens-Ford Glass Co.
Montgomery Ward & Company
North American Rayon Corp.
Quaker Oats Company
Sears Roebuck & Company
Westinghouse Electric & Manufacturing Co.
Western Electric Company
Atchison, Topeka & Santa Fe Railway Co. Coast Lines
Baltimore & Ohio Railroad Co.
Chesapeake & Ohio Raiload Co.
Chicago, Burlington & Quincy R. R. Co.
Pennsylvania Railroad Co.
Union Pacific Railroad Co.
City of Boston, Mass.
City of Buffalo, N. Y.
City of Cambridge, Mass.
City of Providence, R. I.
Commonwealth of Massachusetts
Harvard University
State of Connecticut
State of Maryland
State of New York
University of Illinois
United States Government

THE MAXIMENT COMPANY

Manufacturers of Maximent—a Heavy Duty Cement Flooring Material—Plain or Colored, Sunproof and Limeproof

Sixth and Carr Streets, CINCINNATI, OHIO

MAXIMENT
"FLOORS POURED FROM A SACK"
REG. U. S. PAT. OFF.

MAXIMENT is complete cement floor finish material, furnished in sacks, to which only water is added on the job. *Any cement finisher can apply it.* It is used as a separate topping to be applied over the rough concrete slab or as monolithic finish directly onto freshly poured concrete. In either method of application it may be troweled to a glass hard, smooth finish that is dustless and practically impervious to the absorption of fluids.

Old, worn cement floors invariably disclose hard spots which are still good. Had the entire floor been laid with only the "hard spots" it would still be good.

MAXIMENT is produced in the laboratory with utmost precision, hence it is all equal to the best of the "hard spots." Extreme uniformity is obtained with MAXIMENT. Tests over a period of years show a uniformity in MAXIMENT of less than 8% variation from the mean average of 6700 lbs. per sq. in. at 28 days, A. S. T. M. method of test for compressive strength. MAXIMENT is furnished plain or in colors in 100-lb. sacks.

Since MAXIMENT is made with laboratory precision an exact amount of water is added on the job in order to give a nicely plastic, uniform mix which is applied as separate topping. The MAXIMENT may also be spread dry directly onto the freshly poured concrete slab or ordinary cement topping, extracting the water by absorption. Three types: Separate Topping or Heavy Duty, Monolithic and Standard MAXIMENT.

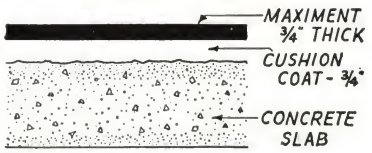
INSTRUCTIONS FOR INSTALLING MAXIMENT FLOORS

The numbers following type of floor indicate the order of operations for:		
Type of Floor	Order of Operations	Coverage per Sack
Separate Topping or Heavy Duty	1, 3, 4, 5, 6, 8, 10, 11, 12	Plain or Colored *Maximent,* 10 sq. ft., 1 in. thick
Monolithic	2, 9, 10, 11, 12	Plain *Maximent,* 80 sq. ft. Colored *Maximent,* 50 sq. ft.
Standard *Maximent*	1, 3, 4, 5, 7, 9, 10, 11, 12	Plain *Maximent,* 80 to 150 sq. ft. of 1 in. ordinary cement topping Colored *Maximent,* 50 to 80 sq. ft. of 1-in. ordinary cement topping

Slab Elevations

1.—Slabs marked "for finish", shall be brought 1½ in. below finish floor elevation. This allowance is made for the thickness of the finish.

Separate Topping



2.—Slabs marked "for finish", shall be brought up to finish elevation established by screed strips placed not more than 16 ft. apart so that non-sagging straightedge may grade the fresh concrete to the required elevation. Screed strips must be readily removable when grading is complete. After the concrete is screeded to the correct finished floor elevation, surplus water may be removed by dragging a hose across the surface after which the surface is smoothed with a darby.

Preparation of Slab

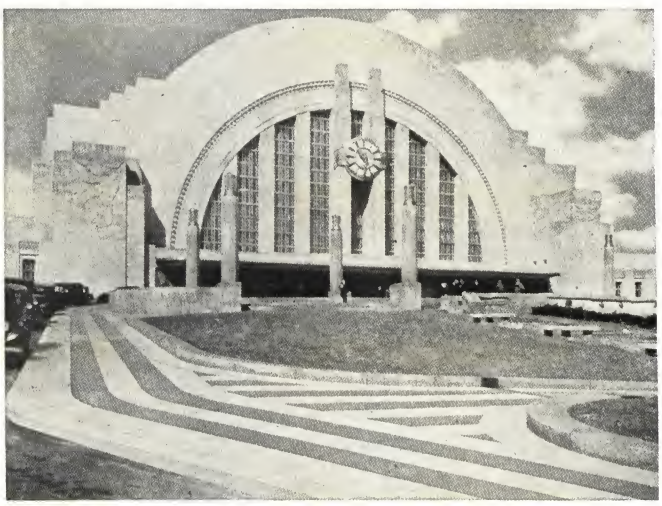
3.—It is important that the slab shall be properly prepared. The slab shall be cleaned of all laitance or scum in order to get a chemical bond. Fresh cement or concrete will not bond to previously set concert, but will bond to clean stone or sand, therefore clean aggregate should be exposed. This is properly done by removing the laitance, with a fine toothed rake or wire brush, after the initial set but prior to the final set. The set of the slab must be sufficiently advanced so that there is no creamy mush, but rather crumbly, when it is brushed. This is to avoid the chance of recombining. If the slab is not properly prepared, and a scum of cement forms and hardens, every inch of the surface must be chipped to insure a bond. *The same holds true on old slabs to be resurfaced.* Mortar droppings or foreign matter will have to be chipped and removed.

Drenching the Slab

4.—The slab should be thoroughly cleaned with plenty of water with pressure and brooms the afternoon or evening before the topping is to be placed. This is necessary in order that the water may penetrate the slab during the night. The screed strips should be set after the drenching. They are of cold rolled steel, ⅜ x 1½ in. placed 8 to 12 ft. apart in parallel rows. Using a surveyor's level the strips may be brought to the proper elevation with two wedges, one on top of the other. Patties of moulding plaster of paris may then be set under the strips to hold them in place.

Grouting

5.—In the morning the slab is again drenched and followed by a creamy grouting of 1 part portland cement to 1 part fine clean sand which is well brushed into the surface. Do not grout too far ahead as it must be fresh when the topping is applied.



Passenger Depot, Cincinnati Union Terminal
COL. HENRY M. WAITE, Chief Engineer
ALFRED FELLHEIMER & STEWARD WAGNER, Architects
JAMES STEWART & CO., INC., General Contractors

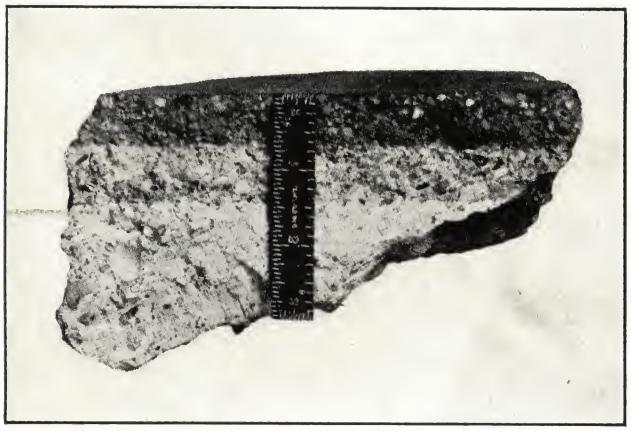
Cushion Coat

6.—A cushion or leveling coat of 1 part portland cement and 4 parts of clean coarse concrete sand is mixed with a small amount of water to a very stiff plastic mix and placed on the slab. It is leveled to ¾ in. below the finish elevation.

The purpose of the cushion coat is to level the slab so that the extremely hard MAXIMENT may be of uniform section. It also serves as a differential between the coefficient of expansion of the slab and that of the MAXIMENT the strength being about midway between the two.

Finish Coat

7.—The topping is a mix of 1 part portland cement to 3½ parts of coarse concrete sand. It is well mixed together with enough water to be nicely plastic. It is then placed on the grouted floor and brought to the level of the secured screed strips set at finish floor elevation. It is then screeded with long straightedge. Surplus water may be removed by dragging a hose across the surface. Then the surface is smoothed with a darby.



Actual sample of 1½-in. MAXIMENT *Heavy Duty Floor taken from a job because of alterations.*

Note there is no line of cleavage between concrete slab and cushion coat nor between cushion coat and the ¾-in. MAXIMENT *topping.*

Topping

8.—When a few batches have thus been placed and while still fresh it is covered with ¾ in. of MAXIMENT. The MAXIMENT is mixed with the exact amount of water called for on the label of the sack and nothing else is added. When thoroughly mixed to the proper plasticity it will appear too wet, but it will not dump without the assistance of a shovel. It is then carefully screeded off to the finish elevation and the screed strips removed, the space being filled with fresh MAXIMENT.

Spreading Dry Maximent

9.—Two or three sacks of MAXIMENT are then dumped into a wheelbarrow. With a sweeping motion of shovel close to the floor spread dry MAXIMENT evenly over wet surface of the level screeded slab. When the dry MAXIMENT shows that it is drying the concrete, it is evened with a drag. Use a drag made like a rake without teeth. Then check floor for level with straightedge, high spots being struck off with sawing motion.

Actual sample of Monolithic Floor Finish taken from a job because of extensive addition and the cutting of the old slab to make an opening for a large vat.

Note density of Monolithic MAXIMENT *Finish. The very dark surface of old floor was due to constant presence of aniline dye, yet in no place was there the slightest trace of any penetration through the surface.*

Every effort is made to screed off the fresh concrete, get the dry MAXIMENT spread on and closed up with the steel troweling. If the slab is on cinder subgrade or the weather is hot no time may be lost, hence men unfamiliar with the process should not attempt too large an area. One good finisher, for each 500 sq ft. is advisable.

If it is found that the slab still shows free water on top after the dry MAXIMENT has been spread, wait until the water has left and apply a little more dry MAXIMENT. This is very important. Unless some fresh MAXIMENT is applied, a deposit of laitance is left. This will trowel nicely and give a good appearance but it will not stand wear for it represents all the dust and impurities that have been filtered out like scum. Fresh, dry MAXIMENT cuts this scum and replaces it with correct material.

Floating

10.—It is immediately floated with a wood float. The wood floating is immediately followed with the first steel troweling if smooth surface is desired. If the slab is on cinder subgrade or the weather is hot no time may be lost, hence men unfamiliar with the process should not attempt too large an area. One good finisher for each 500 sq. ft. is advisable.

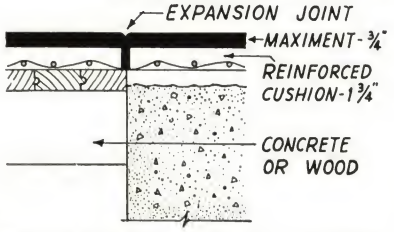
Troweling

11.—After obtaining initial set floor shall again be troweled with steel trowel. If smooth hard surface is wanted trowel again with steel after floor has lost its wet appearance.

Curing

12.—When floor has become so hard as not to be scratched or marred it should be covered with heavy Kraft paper and kept wet for at least 6 days. A longer period is better. Water is essential to carry on the hydration of the cement. The floor may be put to light use while curing but planks should be spread for heavy use.

RESURFACING OLD CEMENT OR WOOD FLOORS



Note: Where the old floor is in poor condition, it is advisable to either remove it entirely and replace as a new job following the specification for "Monolithic Finish," or apply a 3-in. reinforced free floating slab on top of it, if the old floor will stand the additional weight and elevation, and surface with MAXIMENT Monolithic Finish.

Floating Slab

Wherever the new floor is to adjoin present elevations, cut ramps in the old floor commencing about 6 ft. back and sloping to a depth of 2½ in. at the junction point. Place ½ x 3-in. expansion joint strips along all walls and around all columns or projections, and preferably on all column centers to permit movement in the new slab which in no way must bond to the old floor surface. Then spread 4 x 4-in. x No. 14 welded wire mesh, and proceed by the specification for "Separate Topping" or by "Monolithic Finish."

Bonded Floor Topping

Where the present concrete slab is in good condition but the surface is badly worn, remove the top surface a depth of 1 in. by careful chipping. Then soak with water overnight and thoroughly broom clean. Apply creamy grouting and 1 in. of MAXIMENT topping or MAXIMENT hardened surface on ordinary cement topping as selected from the foregoing specifications.

We apply MAXIMENT *Floors east of the Mississippi River, where the area will amount to about 50,000 sq. ft. or more.*

COLORED MAXIMENT

Colors—May be had as shown on color chart below or to match any color. Colored MAXIMENT eliminates the difficulties encountered in the mixing of colors with regular mixes. Colored MAXIMENT requires no mixing on the job, nor the incorporation of other materials. The result is a perfect uniformity of color which is sunproof and limeproof.

Maximent Paste Color—For colored cement floors, mortar joints, precast products, stucco finish or stucco wash, plastered walls, and for coloring concrete. Sunproof and limeproof.

For full strength, use 1 gal. per sack of cement. For lighter shades, use fractional strength. One gallon to a cubic yard of concrete will give warmth and tone to the otherwise raw and lifeless appearance of exposed concrete surfaces. Maximent Paste Color comes in 1-gal cans, with full directions.

HOW TO INSTALL AND POLISH COLORED MAXIMENT

All that has been said for plain MAXIMENT applies equally to colored MAXIMENT. Best results are obtained by following method of applying *Heavy Duty* floors. It is the only method where dividing strips are used. The monolithic and the separate topping methods are the same for the colored.

Polish—Interior hard, smooth troweled colored floors are usually waxed with MAXIMENT Pigmented Polish where full depth of color is wanted at once. The polish removes a slight efflorescence or bloom which sometimes occurs in curing.

After the colored MAXIMENT floor is cured it is cleaned and permitted to dry thoroughly. The polish is applied sparingly with clean cloth. When it has penetrated sufficiently it is rubbed with clean cloths or polishing machine. Polish is designated by same numbers as floor material.

Furnished in 1-gal. cans, coverage 1000 sq. ft.

MAXIMENT FLOOR COLORS

101—WHITE*

50—BLUE

00—PLAIN
(No Color)

143—YELLOW*

51—LIGHT GREY

33—RED

41—TAN

52—DARK GREY

11—BLACK

60—BROWN

31—MAROON
(Quarry Tile)

21—GREEN*

(*)—Extra Price

STUCCO AND PLASTER COLORS

82—WHITE

395—PINK

97—GREY

40—BUFF

391—PALE TAN

392—BLUE

400—PUTTY COLOR

98—VENETIAN PINK

35—BLUE GREY

403—PINK BUFF

397—BROWN

95—GREEN*

(*)—Extra Price

OTHER MAXIMENT PRODUCTS

B-T LIQUID ACCELERATOR

B-T Liquid Accelerator has 3 distinct uses:
(1) Accelerates setting of Concrete.
(2) An Integral Waterproofer.
(3) An Antifreeze.

These qualities, numerated above, have been proven during 17 years' experience with hundreds of concrete jobs throughout the country. It also raises the temperature and improves the workability of a given mix, the concrete obtaining a higher early strength.

B-T Liquid Accelerator saves more than it costs. It enables work to be done many days when otherwise impossible, thereby effecting saving in overhead and overtime. Actual examples can be cited where concrete has been used for heavy traffic in five to six hours after placing in freezing weather.

For Quick Set—The following table shows the amount of B-T Liquid necessary to obtain usable concrete in a given number of hours. Where strength is wanted in less than 24 hours no less than 6 sacks of cement should be used, per cubic yard of concrete.

For a sack of MAXIMENT *use one-third of the quantities shown in the following tables.*

PINTS B.T. LIQUID PER SACK CEMENT FOR QUICK SET

Temp. F.	5 hrs.	12 hrs.	24 hrs.	72 hrs.
70°	10 pts.	8 pts.	6 pts.	4 pts.
50°	11 pts.	9 pts.	7 pts.	4 pts.
30°	12 pts.	10 pts.	8 pts.	4 pts.
*10°	12 pts.	11 pts.	10 pts.	8 pts.

*Heat aggregates and water at 10° F. or below. Protect work as much as possible.

For Integral Waterproofing—Where used only for waterproofing, use 1 pt. per sack of cement above 70° F. and 2 pts. for temperatures above 40° F. For below 40° F. govern by the following table for antifreeze.

PINTS B.T. LIQUID PER SACK CEMENT FOR ANTIFREEZE

40°-32° F. use 2 pts.	24°-20° F. use 4 pts.
32°-28° F. use 2½ pts.	20°-16° F. use 6 pts.
28°-24° F. use 3 pts	16°-12° F. use 8 pts.*

*Heat aggregates and water. Take every precaution against freezing first 24 hrs.

MAXTONE STUCCO

Maxtone Stucco Wash

This is the unsanded portion of Maxtone Stucco Finish, plain white or in all colors. By using a small amount of B.T. Liquid (described above), and water, it may be used to coat and brighten up old cement stucco. It is applied with a brush.

Furnished in 85-lb. sacks. Each sack will cover about 50 sq. yds.

Since this wash is the unsanded portion of the sanded finish, one sack of it may be mixed with about 2½ sacks of white sand on the job. If clean, white Ottawa sand be used and carefully measured for each batch it is possible to obtain fair results in your stucco finish.

How to Apply Maxtone Stucco

The stucco material used shall be *Maxtone Stucco Base Coat* and *Maxtone Stucco Finish,* as manufactured by THE MAXIMENT COMPANY, and applied in strict accordance with the following specifications:

Maxtone Stucco Base Coat—Only sufficient water should be used in mixing to give plastic consistency. The first or scratch coat shall completely cover the lath, being well worked into the meshes so as to form a continuous layer behind the lath. As soon as it has become sufficiently set to permit, the surface shall be well scratched. Not later than one day after, the second or brown coat shall be applied, over the scratch coat, to the thickness of ¼ in.

Maxtone Stucco Finish—After base has become thoroughly dried out and not less than one week in any case, ⅛ in. of finish shall be applied. The dry base coat shall first be thoroughly saturated with water at least fifteen minutes before commencing to apply the finish. Just prior to applying the wall shall again be wetted, so that the otherwise dry wall will not extract any moisture from the finish coat. The texture of the finish shall be determined by placing a small sample to suit architect.

Care of Drying Stucco—Care should be used to prevent the stucco from drying faster than the cement can hydrate. This is most important for the finish since uneven drying is the greatest cause of variation in color. Spraying with water, or covering with wet burlap or tarpaulin will retard too rapid drying, particular care being taken at the corners and openings.

Colors—Made in all colors, sunproof and weatherproof. Furnished in 100-lb. sacks containing $\frac{19}{12}$ of a cu. ft.

MAXTONE MORTAR

This is a hard, dense, durable and uniform fully sanded mortar which is excellent for cement gun application. Many hundred tons have been used in the joints of bridge piers to prevent the destructive action of frost and ice. Mortar joints are not generally given sufficient consideration. One has but to casually observe the mixing of ordinary mortar on almost any job to see the utter lack of attention given to it. And even if careful attention were given to the mixing of ordinary materials on the job, there are no facilities for obtaining sufficient accuracy. Yet the coefficient of expansion and the rate of absorption are directly proportional to the grading and mixing of the mortar. Maxtone Mortar is furnished in 100-lb. waterproof paper sacks.

LASTPHALT LASTING WATERPROOFING

Uses—Protects steel from rust, acid, fumes and smoke—preserves wood against rotting—makes concrete dampproof—stops roof leaks—excellent for tree surgery.

Lastphalt is used in place of hot asphalt for single-ply membrane waterproofing jobs. Contains no injurious solvents or oils and will not burn or explode.

As a dampproofing for basement walls below grade it can be applied immediately after the forms are removed and before the dirt has a chance to cave in.

How Applied—Lastphalt can be applied by spray or brush. If sprayed one coat is sufficient; if brushed 2 coats are advisable, 24 hrs. apart and it should be floated on with a wide soft bristle brush. Do not apply in freezing temperature.

2 gals. should be used to cover 100 sq. ft.

Furnished in 30-gal. steel drums and 5-gal. steel cans.

LASTPATCH LEVELING PLASTIC

A combination of emulsified asphalt and an aggregate mixed dry with cement. Aggregate and cement come ready mixed in 67-lb. sacks to which liquid asphalt is added.

Uses—Lastpatch is a plastic flooring material which is readily applied over old floors to level them, primarily as an under layment for other coverings.

How Applied—For leveling coat over wood, cement, rough concrete, old tile or old magnesite floors.

The floor to be covered shall first be primed with Lastphalt (Liquid Asphalt) using 1 gal. to 100 sq. ft., 1 coat.

Mix dry Lastpatch in mixing box or metal wheelbarrow, with just suffcient water to make plastic; about the consistency of stiff dough. Then add 1 gal. of Lastphalt for each sack of dry material and mix thoroughly until of uniform appearance.

Dump small piles of the mixed materials at intervals on the floor, so that they may be smoothed out with a trowel and connected together to form continuous coating. Level off with sawing motion of short straightedge, and trowel with steel trowel at once, for finish surface.

As soon as the coating is thoroughly hard (usually in just a few hours) the covering of wood block floors, linoleum, cork, rubber, or composition tile may be laid. Lastphalt, the primer, is an excellent binder for cementing the covering to the leveling coat and may be used while the coat is still damp, except for wood block. Until you are familiar with Lastpatch, do not mix too far ahead; try a small batch first.

Coverage—One sack of Lastpatch mixed with 1 gal. of Lastphalt covers 25 sq. ft. ½ in. thick, or 50 sq. ft. ¼ in. thick.

VEN-ITE COMPANY INCORPORATED

250 South Broad Street, Philadelphia, Pa.

BRANCH OFFICES

VEN-ITE—A GUARANTEED GRANOLITHIC CEMENT FINISH FLOOR TOPPING

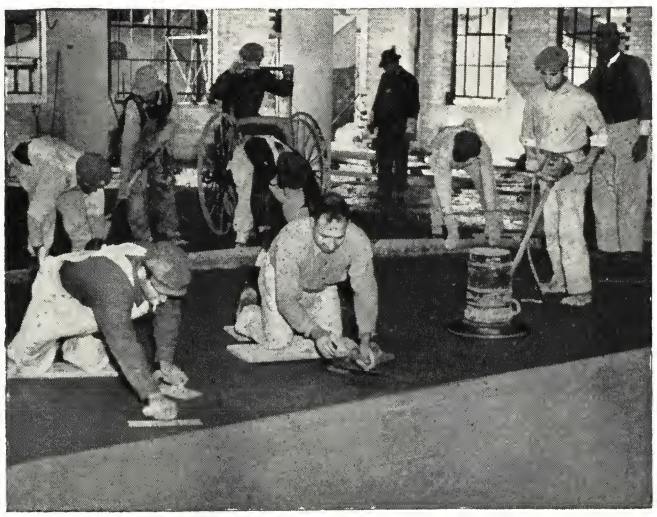
Ven-ite Dewatering Process

VEN-ITE COMPANY INCORPORATED, has developed a processed floor topping, using the Ven-ite dewatering ratio process, which will measure up to any pre-determined result. Each installation is made by our skilled and trained workmen under the direct supervision of an experienced inspector.

A positive process of pre-determined flexural and compressive strength, assuring the ultimate in a cement finish floor topping. Ven-ite Floors are strong, dense, dustless, water and acid resisting, practically abrasion-proof and greatly reduce maintenance costs.

The Ven-ite Organization and Experience

VEN-ITE COMPANY INCORPORATED maintains a nation-wide installation service, our specially trained men doing the entire job. Details of installation, proper preparation of the concrete slab, selection of materials, complete floor installation, final curing and protection of the finished floor, are carefully checked by Ven-ite inspectors to insure absolute uniformity. We have been installing process floors for five years, and the large number of repeat installations for patron organizations attests to the wearability of our product.



The Application of a Ven-ite Floor
Our trained crews are your guarantee of a satisfactory job with no delays

Where Used

Ven-ite Floors meet all the exacting requirements for heavy duty industrial flooring. Successful installations have been made in almost every type of industrial building with extremely successful results. Ven-ite Floors have been installed in:

Airplane Assembly Plants
Asbestos Plants
Automobile Assembly Plants
Barracks Building
Ball Bearing Factories
Book Printing Plants
Breweries
Camera and Film Plants
Canneries
Chemical Plants
Churches
Chewing Gum Factories
Dairies
Distilleries
Dormitories
Explosive Powder Plants
Fire Department Bldgs.
Food Products Plants
Freight Terminals
Generating Plants
Hosiery Mills
Hospitals
Infirmaries
Institutional Bldgs.
Ice Cream Plants
Mental and Training Schools
Federal, State, and County Jails
Oil Packaging Plants
Paper Mfg. Plants
Plastics Mfg. Plants
Paint and Varnish Bldgs.
Printing Plants
Railroad Terminals
Rayon Plants
School Buildings
Soap Mfg. Plants
Theatres
Universities
Utility Power Plants
Warehouses

Ven-ite Floors reduce maintenance costs; a factor of prime importance in any floor construction. Wherever a highly polished, non-dusting floor is desired Ven-ite is the ideal solution at a reasonable cost.

Ven-ite Colored Cement Floors

Ven-ite Floors are available in several colors to match or contrast with walls or trim. Our standard colors are V-1 Maroon, V-2 Buff, V-3 Green, V-4 Brown, V-5 Black, V-6 Gray, and as installed by the Ven-ite Company offer the finest decorative floor to date. Ven-ite colored borders, bases, stairs and wainscoting, can be had in contrasting color schemes.

Ven-ite Guarantee

Ven-ite Floors are guaranteed to bond. All floors installed by our trained men are unqualifiedly guaranteed to meet the most exacting requirements for floors under all service conditions as specified in the contract. Complete installation by our own men insures one responsibility, assures predetermined results exactly as specified.

The Ven-ite Process Controls Water Ratio — (Water Content)

A pre-determined proper concrete condition is obtained by the Ven-ite Process of Controlled Floors. The process permits immediate compaction and will support a man's weight without foot impression 30 minutes after floor topping is placed.

Control of water content—the top strength of portland cement concrete is predetermined by the definite proportion of water content during hydration. Since 30% of four (4)-gallon water ratio per bag of cement enters into hydration and 70% evaporates, it is obvious that water control be kept to a minimum. The Ven-ite Process of densifying and compaction squeezes out excessive moisture and assures an even strength to the entire plane of the topping.

The Ven-ite finish is densified by special heavy electrically powered disc floating machines, followed by our trained troweling crew producing a smooth, hard, level surface showing no tool ridges.

Ven-ite Methods Assure Pre-Determined Results

Materials—The materials used in the Ven-ite Floor are first subjected to an analysis in our testing laboratory. Only cleaned, washed and dried aggregates are used after determining their hardness (H. A. Value) in strict accordance with our rigid standards.

Every shipment is given a granulometric and color-metric test to definitely predetermine its fitness for the specific use to which the floor finish will be subjected.

Ven-crete—Used in the mixture throughout the entire topping, produces a homogeneous mass, holding all aggregates in proper suspension, eliminating weak sections in any section of the floor.

Ven-ol—Final surface treatment, after curing, combines chemically with the free lime soluables of the cement matrix, further increasing the resistivity to atmospheric conditions.

Mixing—The mixing of the component parts of the Ven-ite mixture is carefully controlled by an inspector at all times.

Placing—The placing of the mixture is under constant supervision of a Ven-ite Inspector. This phase is important to secure the value of preliminary hydration reducing evaporation to a minimum.

SPECIFICATIONS FOR VEN-ITE PROCESS CEMENT FINISH FLOORS

Scope—All concrete floor surfaces indicated on the plans, or herein specified to be cement finish, shall be finished by the Ven-ite Process. This work shall be done by the VEN-ITE COMPANY INCORPORATED, 250 South Broad Street, Philadelphia, Pa., or nearest district office, who will furnish all necessary materials, equipment and labor for full and complete performance of the work in accordance with the following specifications.

General—The floor surfaces to be finished shall be turned over to the VEN-ITE COMPANY INCORPORATED by the general contractor, broom cleaned, free from all oil, paint, grease, plaster, mortar material, equipment or other obstructions. The surfaces shall be reasonably true and uniformly even to a level approximately ¾ in. below required finished floor level.

During the laying of floor finish by the VEN-ITE COMPANY INCORPORATED all openings in exterior walls adjoining the area being finished shall be closed and kept closed, and when heat is necessary to keep the interior temperature well above the freezing point, such heat shall be provided by the general contractor without cost to the VEN-ITE COMPANY INCORPORATED.

Preparation of Concrete Surfaces—Whenever possible within 24 hours after concrete has been poured, the VEN-ITE COMPANY INCORPORATED shall remove laitance and scum from the surface to be finished, leaving the surface clean and rough to insure uniform and sufficient bond when finish is applied.

When surfaces to be finished are inaccessible prior to final set of concrete, laitance and scum shall be removed by the VEN-ITE COMPANY INCORPORATED by mechanical chipping and scouring of the surfaces.

Materials and Mixing—Materials for cement finish shall consist of: Portland cement, complying with the standard Specifications for Portland Cement as last adopted by the American Society for Testing Materials.

Fine aggregate, consisting of clean sand or screenings from hard crushed stone or gravel, free from injurious quantities of clay, loam or vegetable matter, using only such portions as will pass a No. 4 sieve.

Coarse aggregate consisting of clean, hard gravel, crushed stone, free from injurious quantities of clay, loam, or vegetable matter, ranging in size from ¼ to ½ in.

The mix for finish shall be one part portland cement, one part fine aggregate and one and three quarters parts coarse aggregate, mixed with sufficient water to produce a workable flowing mixture.

Laying of Finish—Screeds to true level of finished floor surface shall be set by the VEN-ITE COMPANY INCORPORATED to establish grade.

The concrete surface shall be wet at the time finish is laid.

Floor Finish—Shall be approximately ¾ in. thick. Special care shall be taken to obtain the correct water content of not more than 5 gals. of water to each sack of cement. After the concrete topping is placed and screeded, the excess water shall be removed from the topping by the Ven-ite dewatering process. The topping shall be of such consistency that, 30 minutes after the mixture is screeded, it will sustain the weight of 300 lbs. on an area of 1 sq. ft. of topping without making any impression on its surface. Topping shall be compacted thoroughly, using motor-driven floats of the metal disc type or by rollers weighing approximately 200 lbs. and not over 24 in. in length. If larger rollers are used, they shall be proportionally heavier. This compacting shall be followed by hand troweling operations as required to obtain a smooth, hard, impervious surface free from marks and blemishes. No additional water shall be applied to the topping by sprinkling or otherwise during the finishing or troweling operations. The floor finish shall be given not less than three trowelings to secure the results stated herein before. The final troweling shall be burnishing, and as it progresses the surface shall show a shine or gloss.

Before the final troweling sufficient time shall have elapsed so that the cement paste does not adhere to the edge of the trowel. The trowel shall be held at an angle of approximately 30 degrees to the surface. The operation of final troweling shall produce an audible ringing sound from the trowel.

Protection—This Contractor shall protect the finished surface of the floor until final completion of the building, with an approved covering material, reinforced with fibres thoroughly embedded in asphalt and covered on both sides with a heavy, tough paper. This protection shall be laid with 4-in. laps and joints covered with gummed strips, or glued with waterproof cement, securely holding the sheets together, and shall remain in place until the completion of plastering and finished cement surfaces are thoroughly cured and shall then be removed and all surfaces thoroughly cleaned.

All covering destroyed during the progress of the work shall be immediately replaced with new covering

Treatment—After curing, when the floor is dry, a further treatment shall be given to make the floor resistent to stains, oils, and fluids, with Ven-ol.

Treads, Risers, Landings—(*Note to Architects*) Treads, Risers, if to have this mixture, to be reinforced with wire lath as shown on the drawings.

Coved Base—Cove Base shall be formed when called for and finished as above. Metal Ground Bead when required, to be furnished and set by the plaster contractor.

Experience—It is the true intent that this type of floor to be of the highest class workmanship.

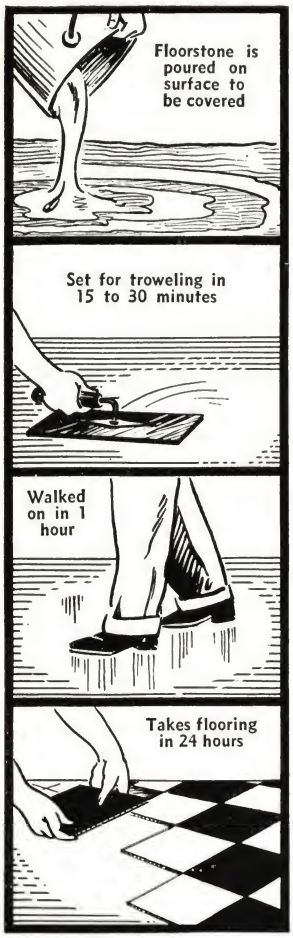
No work below this standard will be accepted.

TAMMS SILICA CO.

FLOORING DIVISION

A Tried and Proven Line of Construction and Maintenance Specialties

228 No. La Salle Street, CHICAGO, ILL.



FLOORSTONE

The Ideal Underlayment for Resilient Floor Coverings and Wood Parquet

Mixes with sand and water only—sets in one-half hour. Walked on in one hour. Takes flooring in twenty-four hours. FLOORSTONE Underlayment is ideal for asphalt and rubber tile, linoleum and all standard types of resilient floor coverings, including wood parquet. It can be rapidly and easily laid with equal success over old wood, metal or concrete with perfect bonding. An added feature is that FLOORSTONE can be applied at feather edge thickness over concrete without disintegration. It is guaranteed not to shrink, expand, buckle or crack. FLOORSTONE is no more expensive than other types of underlayment and requires much less labor and enables job to be finished in a much shorter length of time.

Specifications for Mixing and Installing over Various Surfaces

(1) Mixture of Floorstone Underlayment—Use one part of FLOORSTONE by weight to one part of Tamms Special White Silica Sand or equal; mix with sufficient water to bring to the consistency of medium heavy batter. We recommend approximately 3 gallons water to 100 lb. mixed material or 35 lb. to one gallon. On large installations we recommend mixing FLOORSTONE in a steel wheelbarrow where convenient, otherwise use 5-gallon pail. It is of course understood that FLOORSTONE and Dry Sand have been cut together in equal parts by weight prior to mixing with water.

(2) Application of Floorstone—Work the FLOORSTONE into approximate position with short darby and allow material to seek its own level much in the manner of heavy batter. After initial set has taken place (approx. 15 to 30 minutes) as determined by finisher, FLOORSTONE should be finished with straight edge steel trowel. Due to desirable quick setting features, FLOORSTONE should not be poured faster than convenient for finisher to handle.

(3) Preparation of Sub-Floors—*(a) Concrete Floors (Old or New)*—All grease and foreign matter must be removed. Floors should be dampened with water in order to retard suction prior to applying FLOORSTONE Underlayment. It is not necessary to chip concrete floor surface as FLOORSTONE will bond perfectly. It is not necessary to prime concrete floors with asphalt except in cases where very extreme suction prevails. Mix and pour in strict accordance with manufacturer's specifications.

(b) Wood Floors—All wood floors should be renailed and braced if necessary. Worn boards should be replaced. Wood floors should be cleaned of grease and foreign matter. Apply metal lathe at right angles to floor boards, nailing at 6 to 8-in. intervals after stretching as tight as possible. Prime entire floor with Tamms FLOORSTONE Asphalt Primer or its equal. Allow primer to set and dry thoroughly, then mix and apply FLOORSTONE per directions.

(c) Metal Decks (Home or Building Construction)—Remove all grease and dirt. Apply one coat of Tamms FLOORSTONE Asphalt Primer or its equal. Mix and apply FLOORSTONE per directions.

(d) Old Mastic—Any portions of the old mastic floor that have broken their bond with the surface should be cut out. Prime entire area to be treated with FLOORSTONE Asphalt Emulsion. Apply FLOORSTONE.

(e) Pre-cast Gypsum Tile—Sweep clear of dust, scraping off any foreign substance. Prime area with FLOORSTONE Asphalt Emulsion—mix and install per manufacturer's instructions.

FLOORSTONE ASPHALT EMULSION

The finest grade of true asphalt emulsion on the market today. Our material is designed primarily to prime wood floors before installing FLOORSTONE, but works equally well as a tile cement for asphalt tile. We wish to stress the fact that our product is made from a true processed asphalt and not from a by-product. It is 99% natural bitumen and has all essential properties for maximum service life. No artificial asphalts, petroleum or vegetable oils, tar, pitch or other adulterants have been added. Furthermore, our crude asphalt is guaranteed to be uniform at all times. Each shipment is the same as the last.

TAMMS CEMENT COLORS

Acid free, lime and alkali proof. Permanent and non-fading as well as sun fast. Tested and proven colors. Write for specifications.

TAMMS MORTAR COLORS

Accepted as standard. Now available in 5-walled, dust-proof (50-lb. or 100-lb.), paper bags that eliminate messy handling. Colors easily identified—bags printed front and end. Overnight service from fourteen convenient warehouses.

LINDEX CASEIN PASTE PAINT

Gives velvet flat finish. Washable—one coat covers black. Meets government specifications.

TAMTEX WATER-PROOF CEMENT PAINT

For porous masonry surfaces. In powder form—mixes with water only. Meets government specifications for water cement paint.

DOUBLE DUTY CAULKING COMPOUND

Comes ready for use with either putty knife or gun. It dries to a skin coat and expands and contracts without cracking or chipping from material to which applied. Easy to apply—gives best weather protection at little cost.

FLOORSTONE PATCH

A patching material which meets industrial requirements wherever foot traffic surfaces must be quickly and economically repaired. May be feather edged and does not shrink —mixed only with water. Write for detailed specifications.

MARBLE CHIPS FOR TERRAZZO

We offer a complete line of assorted sizes in white, pink, and gray. Our marble chips are all pure sparkling Georgia marble, screened to the desired size. The chips are the correct hardness for grinding down and polishing.

FLOORSTONE SEALER

For concrete or masonry surfaces. A penetrating sealer, not an ordinary floor paint, as our sealer penetrates the pores and seals voids. Will not peel or chip. Is resistant to water, oil, alcohol and soap solutions, as well as all acid and alkaline solutions within reasonable limits. 400 to 500 sq. ft. coverage per gallon, depending upon the porosity of the concrete. Standard shades; Tile red, linoleum brown, light gray, dark gray and green.

TAMMS XXX EXPANSION JOINT SEALER

A sealer that has an expansion and elasticity similar to sponge rubber. Its compressibility is obtained due to the minute imprisoned air cells making possible 25% to 30% compression without extrusion. The elasticity is between 35% and 40%. It adheres to dry and damp concrete, wood, metal, etc., through all process of expansion and contraction without becoming detached. It waterproofs immediately after setting. It is poured and put in place *cold*. No apparatus or heating necessary.

WALLSTONE

SETS IN ½ HR.—APPLY COVERING IN 24 HRS.

A new wall material that sets in one-half hour and gives smooth, extra hard finish over which any type wall covering can be applied within twenty-four hours. Can be troweled from skim coat to desired thickness on patch work or leveling jobs over practically all types of surfaces.

For Leveling Preparatory to Applying Wall Covering

Wallstone has been developed to meet the need for a quick, durable leveler for rough walls. It is equally effective for filling cracks, breaks, holes, grooves, and low spots. Wallstone is easily mixed, requiring only water. It is troweled on the wall and hardens in a half hour, making a permanent bond with the old surface. Within twenty-four hours after applying, Wallstone is ready for covering. Its smooth cement-like hardness makes it an ideal base for any type wall covering and its quick-drying qualities save as much as several days on the job. Wallstone comes in dry powder form in 100-lb., 5-ply paper bags.

CENTRAL COMMERCIAL CO.

SALES AGENTS AND DISTRIBUTORS

332 So. Michigan Avenue
CHICAGO, ILL.

12 East 41st Street
NEW YORK, N. Y.

VOGELINER COLOR STRIP
TRADE MARK
DIVIDERS FOR TERRAZZO OF
·TEMPERED PLASTICS·

"Vogeliner" Color Strip Dividers

"Vogeliner" Color Strip Dividers (patented and others pending) are made of tempered plastics for terrazzo, cement, composition, floors and walls. "Vogeliner" Color Strip is used as an edging against linoleum, carpet and mastic type floors. "Vogeliner" color base and plaster screed is used for finish at top of terrazzo and cement or composition base.

Ornamental design units are used as an integral or multiple divider and decoration in terrazzo work.

All strips are 1¼ in. deep, made in 5-ft. lengths of $\frac{3}{16}$ and $\frac{3}{8}$-in. face width. Made in *seven colors* similar to marble in color and wearing qualities.

Properties and Durability

Extensive laboratory tests and report of Robt. W. Hunt Testing Laboratory show abrasive wear to be of the same ratios as the marble generally used in terrazzo.

Actual use in public buildings and government buildings, where excessive wear occurs, shows that the "Vogeliner" Color Strip has even wearing qualities with the terrazzo and that it withstands all uses and abuses as does the terrazzo in which it is laid. "Vogeliner" looks and wears like marble, also resists static loads, and is a non-conductor of electricity. "Vogeliner" so used produces better terrazzo and in color designs for a durable and artistic floor.

Service

To assist the architect in selection of color and design pattern. Standard unit one-piece ornaments "A.B.C.D." 8-in. over all are now available. (See drawing on reverse side of this page.) Stock strips and ornamental inserts afford wide choice of patterns and color combinations. If special ornamental design insert unit or units are desired, quotations will be gladly given.

Interlocking Feature

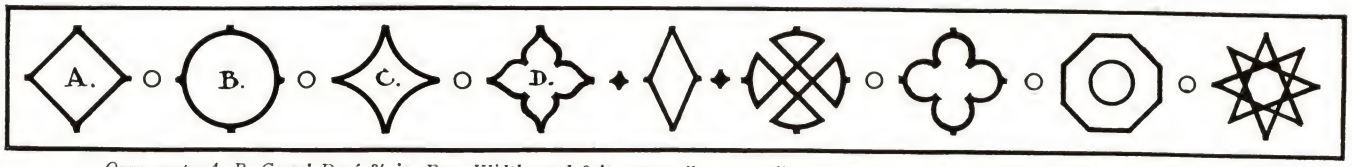
"Vogeliner" is designed to mechanically lock the strip, into the base screed and also the terrazzo top coat. The cross section of the strip provides continuous anchorage. The strip is integral or of one solid piece of 1¼-in. depth with a maximum depth for wear. Therefore, no parts to loosen or lugs to interfere. Grinds and cuts like marble with no riveting effect, or ragged edges. "Vogeliner" divides the floor into interlocked, individual panel units, all of one continuous wearing extent.

Patterns, Design and Colors

"Vogeliner" Color Strip Divider for terrazzo affords the designer a new medium in floor work. By the use of Cream White, Black, Brown, Red, Green, Silver Gray and Yellow-Buff, singly or in combination, and by contrasting color inserts, the divider becomes a part of the design color scheme of the floor. Beautiful surfaces can be obtained by the use of one kind and color of marble with tinted white or white and natural cement background, using small panels of "Vogeliner" Color Strip Divider for either a contrasting or blending design effect. Curved designs can be obtained by using the stock "Vogeliner" color strip and stock unit inserts.

STRIPS ARE MADE 1¼ IN. DEEP OF 5-FT. LENGTHS OF $\frac{3}{16}$-IN. AND $\frac{3}{8}$-IN. FACE WIDTHS IN THE FOLLOWING COLORS:

SEE RECOMMENDED SPECIFICATION FORM FOR ARCHITECTS ON NEXT PAGE



Ornaments A, B, C and D of ⅜-in. Face Widths and 8 in. over all now available for ⅜-in. Strip Designs. Others furnished special

Color Base-screed and Linoleum Edging

"Vogeliner" Base-screed is a new, permanent color finish for the top of monolithic base work. Being of ⅜-in. face width and adaptable for "flush" or 1/16-in. to ⅛-in. projection, it affords a practical, sanitary and decorative finish. The cost of decorating or painting is eliminated at this point and a clean and sanitary and non-corrosive finish is obtained. Where base and border are required, used with a resilient floor material, use "Vogeliner" color base-screed and stock "Vogeliner" color strip of ⅜-in. face as an edging against the resilient floor material.

Vogeliner Specification

(Insert in Terrazzo Section)

"Vogeliner" Color Strip Dividers for Terrazzo (or Cement Work)—Furnish and install into the screen-bed, while it is still in the semi-plastic state, "Vogeliner" Color Strip Divider of Tempered Plastics for the specified face widths as shown on the plans. In panels as shown using strips of 1¼-in. depth of one piece with inter-locking integral grooves. Follow all design layouts for color and widths of "Vogeliner," and color ornamental inserts. Where strip is used as edging against linoleum or other similar material, the terrazzo base and border is to be ground and finished before the cement bed for the linoleum is laid.

Use a steel bar of the thickness of the terrazzo top as a setting gauge when installing the "Vogeliner" Color Strip, using care to trowel screed material against the sides of strip to cover anchor shoulders of the strip. Place all strips, unit ornamental inserts accurately and in a neat manner. Installation to have neat joints and cuts and to be set level and all done in a workmanlike manner.

"Vogeliner" Color Base-Screed—(Insert in Terrazzo Section.) Furnish and install "Vogeliner" Color Base-Screed of Tempered Plastics of colors as indicated on plans or room schedule for bases of Terrazzo or Cement as scheduled. To be set at heights and flush or projecting, all, as indicated on plans, and to be set level and true with mitered inside corners and bent outside corners. Use due care and set level and true and neat, all in workmanlike manner.

Recommended Panel Sizes

We recommend panels of from 15 to 30 in. per side. Unsightly cracks are minimized by the use of the smaller individual (though interlocked) panel or block of terrazzo. Main lines of dividing strips should follow the lines of the structural steel or concrete to avoid cracks due to general shrinkage or settlement of building. However, do not sacrifice the design pattern but combine in layout if possible.

We *recommend* the use of the standard specifications of the National Terrazzo and Mosaic Association and to accentuate color contrasts, the use of chemically pure cement colors and white cement.

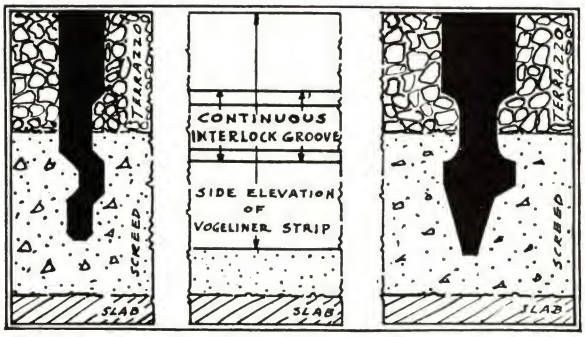
Economy of Installation of Integral Strip

"Vogeliner" is homogeneous and is of one piece of stock designed to give maximum depth of wear.

For installation, can be cut and mitered by hand with a steel hack-saw or by power with thin carborundum wheel. Strips can be formed by terrazzo contractor for any curve desired for the work. The sides of the strip are plumb with no projections and all joint cuts can be made tight. Ends of strip are beveled to facilitate tight end joints.

"Vogeliner" grinds like marble with color shades similar to marble.

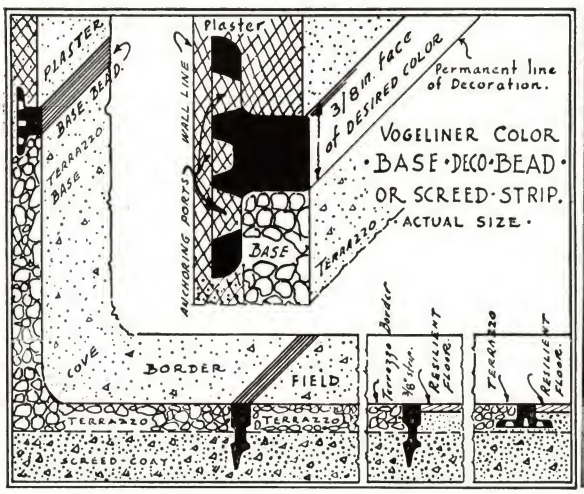
The final installed cost is very economical and the strip is easy to set and is self-aligning.



3/16-in. Strip Locking Grooves ⅜-in. Strip

Sizes and Prices

The 3/16 and ⅜-in. face widths of dividers meet the demand for visibility and design of divider, and are reasonable in price. The architect can now use these widths and the seven colors desired at no extra ultimate cost to the owner.



Section Through Base and Border Showing "Vogeliner" Color Base Bead and Border Edging Strip

Lobby—Villa St. Felix, Plymouth, Mich.
O'Meara & Hills, Architects

SECTION 11

CONTINUED ⟶

LOCKSTRIP MANUFACTURING CORPORATION

T. M. C. Lockstrips for Terrazzo, Composition, Linoleum and Cement Floors

36-09 Vernon Boulevard, LONG ISLAND CITY, N. Y.

Products

T. M. C. LOCKSTRIP (patented METAL DIVIDING STRIPS) for terrazzo, marble, composition, linoleum and cement floors, base and wainscots and plaster base grounds. Manufactured in brass, nickel silver and zinc.

TRADE-MARK

Distribution

Any contractor can obtain T. M. C. LOCKSTRIPS direct from our factory or through any of the 19 warehouses of the Chase Brass & Copper Co., Incorporated located throughout the country.

T. M. C. LOCKSTRIP was introduced to the Terrazzo trade in 1921 and was immediately adopted by the trade because of its value as an expansion strip, and was quickly recognized as a means by which the installation of beautiful terrazzo work in various designs was greatly simplified. T. M. C. LOCKSTRIP functions just as effectively in composition, cement and other plastic floors as it does in terrazzo.

WHY LEADING ARCHITECTS SPECIFY T. M. C. LOCKSTRIPS

(1) T. M. C. Lockstrips Prevent Cracks

The slotted openings or locks in T. M. C. Terrazzo Floor Strips form an intentional weak spot in the underbed. If cracks occur through expansion or contraction, they will localize at these weak spots and not travel to the surface of the floor.

(2) They Insure Uniform Thickness of Aggregate

The "wings" on T. M. C. LOCKSTRIPS provide an accurate measuring gage for a uniform thickness of aggregate. With T. M. C. LOCKSTRIPS, architects can be assured of getting exactly ½, ⅝ or ¾ in. of surface coating as called for in their specifications. With these T. M. C. "wings", you have positive optical proof that the strip has not been pushed down too deep into the underbed, with proportionately less aggregate in the top coat. An aggregate that is too thin cannot be rolled or compressed to a proper density. Consequently it will not wear satisfactorily and will have a greater tendency to crack.

(3) They Cannot Be Pushed Out of Position

T. M. C. patented "wings" also provide a sure means of setting strips straight horizontally and true vertically. The long slot holes and the half round openings under the "wings", provide the means for a perfect bond between the strip and the cement underbed. The strip cannot be pushed out of line in rolling the terrazzo aggregate, nor can they be further depressed if, in spots, the underbed should happen to be of poor mixture.

(4) They Are Free From Waves Or Curvature

Superior quality of metal, and specially designed presses for punching out the slots and wings, make T. M. C. LOCKSTRIP perfectly straight and free from waves or curvature.

(5) Protected By Patents

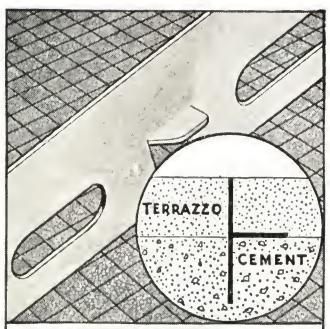
T. M. C. LOCKSTRIPS are fully protected by letters patent issued by the U. S. Patent Office, which have been repeatedly upheld by court decisions.

(6) Guaranteed

The LOCKSTRIP MANUFACTURING CORPORATION stands squarely back of every foot of T. M. C. LOCKSTRIP. Look for the trademark.

FOR TERRAZZO FLOORS

Standard Lengths—6 feet

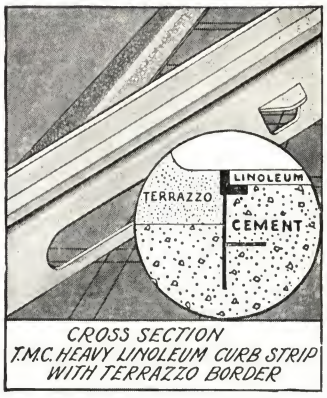


CROSS SECTION
T.M.C. LOCKSTRIP
INSTALLED IN TERRAZZO FLOOR

Type No. 10—1 in. wide 20 B.&S. gage	Type No. 18—1 in. wide 14 B.&S. gage
Type No. 11—1¼ in. wide 20 B.&S. gage	Type No. 19—1 in. wide 12 B.&S. gage
Type No. 12—1 in. wide 18 B.&S. gage	Type No. 19-A—1⅛ in. wide 12 B.&S. gage
Type No. 13—1¼ in. wide 18 B.&S. gage	
Type No. 14—1¼ in. wide 16 B.&S. gage	Type No. 20—1¼ in. wide ⅛ in. top
Type No. 17—1 in. wide 16 B.&S. gage	Type No. 50—1¼ in. wide $\frac{3}{16}$ in. top
Type No. 15—1¼ in. wide 14 B.&S. gage	Type No. 21—1¼ in. wide ¼ in. top
Type No. 16—1¼ in. wide 12 B.&S. gage	Type No. 60—1¼ in. wide ⅜ in. top
Type No. 42—1¼ in. wide 9 B.&S. gage	Type No. 61—1¼ in. wide ½ in. top

FOR COMBINATION TERRAZZO AND LINOLEUM FLOORS

These strips are designed to be used between terrazzo and linoleum or tile floors, having an accurate shelf to fit linoleum or tile of various thicknesses. They are a necessary detail for the proper laying of linoleum or rubber tile to a terrazzo (or cement) border in hospitals, hotels, clubs, churches and office buildings. They establish a definite level for the cement underbed.



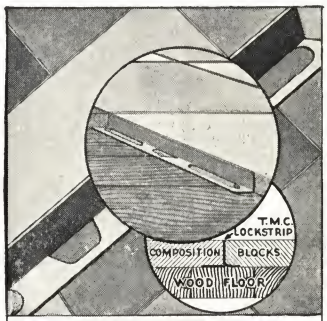
CROSS SECTION
T.M.C. HEAVY LINOLEUM CURB STRIP
WITH TERRAZZO BORDER

Standard lengths—6 feet

Type No. 52—⅛ in. top x 1¼ in. wide for $\frac{3}{16}$ in. linoleum
Type No. 52A—⅛ in. top x 1¼ in. wide for ¼ in. linoleum

ANGLE STRIPS

Angle Strips are used as dividers for composition and magnesite terrazzo floors. Also as dividers between the plaster wall and the terrazzo or cement base.



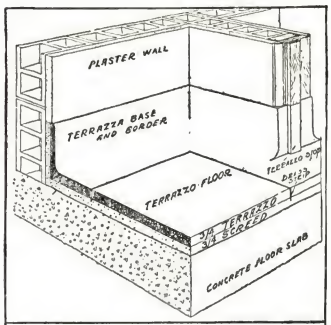
CROSS SECTION
T.M.C LOCKSTRIP
INSTALLED IN COMPOSITION FLOOR

Standard lengths—6 feet

Type No. 38—⅜ in. x ⅝in x 20 B.&S. gage
Type No. 39—⅜ in. x ⅝ in. x 18 B.&S. gage
Type No. 38-A—½ in. x ½ in. x 20 B.&S. gage
Type No. 39-A—½ in. x ½ in. x 18 B.&S. gage
Type No. 40—⅝ in. x ⅝ in. x 20 B.&S. gage
Type No. 41—⅝ in. x ⅝ in. x 18 B.&S. gage
Type No. 40-A—¾ in. x ½ in. x 20 B.&S. gage
Type No. 41-A—¾ in. x ½ in. x 18 B.&S. gage

COVE BASE DIVIDERS

Cove Base Dividers are made wide or narrow toe, whichever may be desired. Punched with patent T. M. C. flange to insure accurate finish. Furnished in all thicknesses from 20 B&S gage to ¼-in top.



TYPICAL TERRAZZO INSTALLATION IN NEW BUILDING

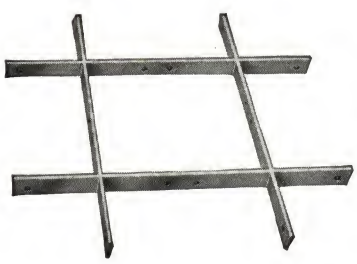
Standard Sizes

1 in. Radius—6 in. High—wide toe
1½ in. Radius—6 in High—wide toe
1 in. Radius—6 in. High—narrow toe
1½ in. Radius—6 in. High—narrow toe

SLOTTED GRILLES

For Hospital Operating Rooms

Slotted grilles should be installed in all hospital operating rooms to ground static electricity. Installed parallel to the walls and soldered at each intersection, they form a positive electrical connection.



These grilles are made of ¾-in. wide by ⅛-in. thick metal slotted and interlocked to form 6-in. squares. All strips are securely soldered together at each intersection.

SUGGESTED FORMS OF SPECIFICATION

For Terrazzo Floors

As indicated on plans or separately specified, all terrazzo work shall be divided into panels, borders and designs with T.M.C. Lockstrips as manufactured by the LOCKSTRIP MANUFACTURING CORPORATION. All strip shall be of Brass (or Nickel Silver or Zinc).....inches wide over all by.....inch (or gage) thick for.....inch thickness of terrazzo aggregate.

Linoleum and Rubber Tile Floors

In all places indicated on plans or specified, insert between cement or terrazzo borders and linoleum fields, T.M.C. Brass (or Nickel Silver or Zinc) Curb Dividing Strips.....inch thick at top for.....inch thick linoleum type No.....as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

Operating Rooms and Slotted Grilles

All Divider Strips for metalized terrazzo floor shall be ¾ in. high by ⅛ in. thick as manufactured by LOCKSTRIP MANUFACTURING CORPORATION. They shall run parallel to walls and shall divide floors into 6-in. x 6-in. squares. All metal strips shall interlock and be securely soldered together at each intersection so as to form a positive electrical connection. In each room and corridor near the four corners and at centers provide an approved bare copper conductor wire of No. 6 B&S Gage or equivalent Copper Strip and securely solder same to Floor Divider Strip.

For Composition Floors

All composition floors shall be divided into panels of sizes indicated on plans or called for in specifications with T.M.C. Lockstrip Angles size.....inch by No.....B&S Gage Brass (or Nickel Silver or Zinc) as manufactured by the LOCKSTRIP MANUFACTURING CORPORATION.

Marble Tile Floors

All marble tile floors specified or indicated on plans shall have the joints formed with T.M.C. Lockstrip.....inch wide by No..... B&S Gage Brass (or Nickel Silver or Zinc) as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

Sanitary Cove Base

Terrazzo Base shall be divided by T.M.C. Brass Cove Base Dividers.....inches high by.....inch radius by No.....B&S Gage as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

Plastering

All Sanitary Bases when joined with flush finish plaster above shall be separated from the plaster by the use of T.M.C. Brass Angle Strip.....inch by.....inch by No.....B&S Gage as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

INSTALLATIONS

T.M.C. LOCKSTRIPS have been used in many of the most prominent buildings in the country. Below are listed a few representative installations:

BUILDING	ARCHITECT
N. Y. Central Passenger Station Buffalo, N. Y.	Fellheimer & Wagner
Chrysler Building New York, N. Y.	William Van Alen
R. J. Reynolds Building Winston Salem, N. C.	Shreve & Lamb
Mellon National Bank Pittsburgh, Pa.	Trowbridge & Livingston
Merchandise Mart Chicago, Ill.	Graham, Anderson, Probst & White
Meadowbrook Hospital Meadowbrook, N. Y.	John Russell Pope
Bellevue Hospital New York, N. Y.	Charles B. Meyers

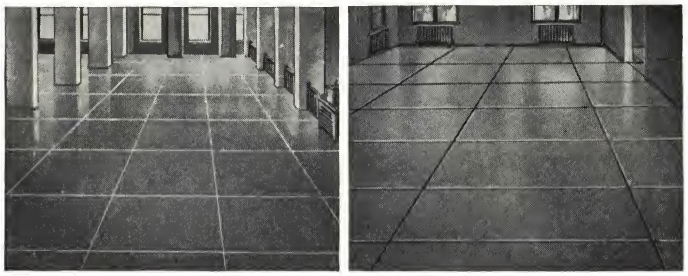
BUILDING	ARCHITECT
Rockefeller Center New York. N. Y. (Various buildings)	Reinhard & Hofmeister Hood & Fouilhoux Corbett, Harrison, MacMurray
Marshall Field Building Chicago, Ill.	Graham, Anderson, Probst & White
60 Wall Tower New York, N. Y.	Clinton & Russell
R. H. Macy & Co. Store New York, N. Y.	Kohn & Butler
Union Railway Station Indianapolis, Ind.	McLenahan & Bencker
L. Bamberger & Co. Newark, N. J.	Jarvis Hunt
N. Y. Central Office Building New York, N. Y.	Warren & Wetmore

T. M. C. LOCKSTRIP FOR MODERN CEMENT FINISH FLOORING AND WALKS

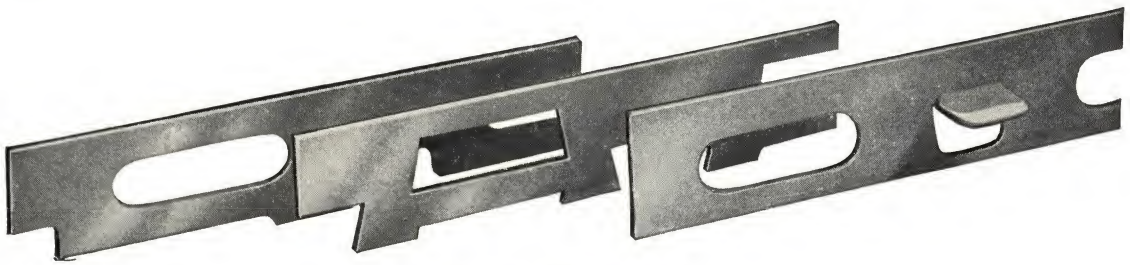
T. M. C. Lockstrips are recommended for cement floors and walks where uniform or alternating colors are desired. Cement floors installed with T.M.C. Lockstrips present a smooth sanitary finish without cracks or crevices and eliminate unsightly and unsanitary scoring joints. This type of floor, in uniform or alternating colors, is ideal for factories, industrial plants, railroad stations, warehouses, etc. Also for outside porches, dance floors and sidewalks.

Any contractor can obtain T.M.C. Lockstrips in Brass, Nickel Silver or Zinc direct from our factory or through any of the 19 warehouses of the Chase Brass & Copper Co., Incorporated.

With T. M. C. Lockstrip **Without T. M. C. Lockstrip**

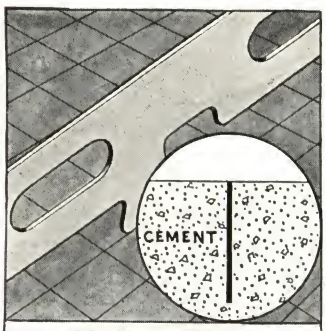


No Open Joints **Old Type Scored Joints**



Standard Lengths—6 feet

	For One-Color Cement										For 2-Color Cement	
Type	29	30	43	46	44	47	45	48	31	32	28	27
Width	1″	1¼″	1″	1¼″	1″	1¼″	1″	1¼″	1¼″	1¼″	1¼″	1⅜″
B&S Gage No....	18	18	16	16	14	14	12	12	⅛″ top	¼″ top	18	18



CROSS SECTION
T.M.C. LOCKSTRIP
INSTALLED IN CEMENT FLOOR

Suggested Form of Specification

All floors shall be divided into panels of sizes indicated on plans or called for in specifications with T.M.C. Brass (or Nickel Silver or Zinc) Cement Strips,.....inches wide over all by No.....B&S Gage thick, Type No.....as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

Three Color Cement Floor—No Open Joints

Some Typical Installations

BUILDING	ARCHITECT	BUILDING	ARCHITECT
Amherst College Gymnasium, Amherst, Mass.	McKim, Mead & White	Valley Stream High School, Valley Stream, N. Y.	Coffin & Coffin
N. Y. Central Station, Buffalo, N. Y.	Fellheimer & Wagner	Hicksville High School, Hicksville, N. Y.	Tooker & Marsh
Bloomfield Trust Co. Office Bldg., Bloomfield, N. J.	Uffinger, Foster & Bookwalter	Woolworth Store Sidewalk, Broadway and 43rd St., New York, N. Y.	A. F. Winters
Genealogical & Biographical Society Bldg., New York, N. Y.	LaFarge, Warren & Clark	Auditorium and Convention Hall, Atlantic City, N. J.	Lockwood, Greene & Co.

MEMORANDA

Versatility in

TERRAZZO

with DIVIDING STRIPS

11/24

MANHATTAN TERRAZZO STRIPS

PERMIT UNLIMITED FLEXIBILITY IN EXPRESSION OF MODERN ARCHITECTURAL IDEAS

Terrazzo, a Venetian art, centuries old, has come to be one of the most beautiful of modern floor treatments. Terrazzo is unsurpassed as a medium for expression in design and color for use on floors, stairs, partitions, wainscote, ornamental murals and similar decorative units.

In this catalog we have included many unusual terrazzo installations as examples of the wide range of application of this versatile material.

A modern accessory and necessity in terrazzo work is the dividing strip. These strips tend to reduce the possibilities of cracking and when cracks do occur they are confined within the limits of the dividing strip making them less noticeable. The use of dividing strips permits the architect to create any design desired to blend with the entire decorative scheme.

MANHATTAN TERRAZZO STRIPS ARE PRODUCED IN A MODERN PLANT

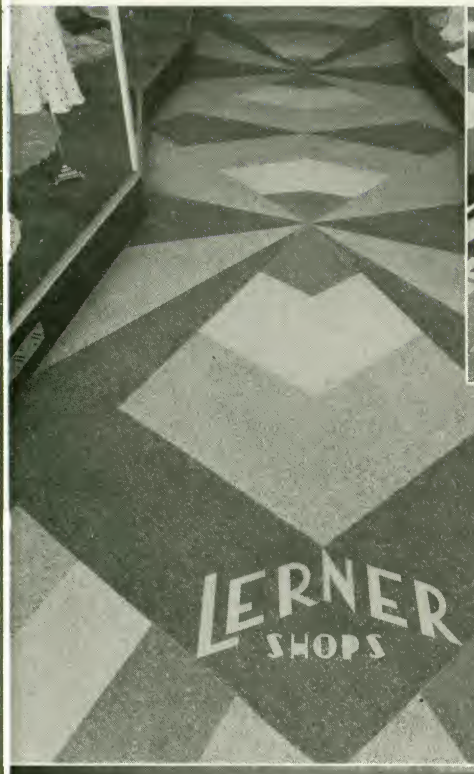
Manhattan Dividing Strips for Terrazzo, Marble, Composition, Linoleum and Cement floors are manufactured in a modern plant equipped with the latest machinery. Our trained personnel represent the best in experienced workmen — our facilities enable us to handle any size order at short notice. The illustrations below show the various departments in our plant. Reading from left to right, *top row*: Stock Room, Office; *bottom row*, Heavy Top Dept., Press Dept., Base Bead Dept.

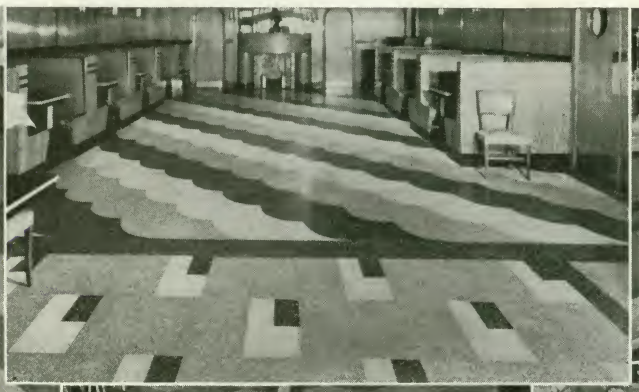
The Covers: We are indebted to the Universal Atlas Cement Company for the illustration on the front cover of this catalog, and to the Medusa Portland Cement Company for the back cover illustration, both of which illustrate unusual and distinctive terrazzo installations made possible by the use of white cement.

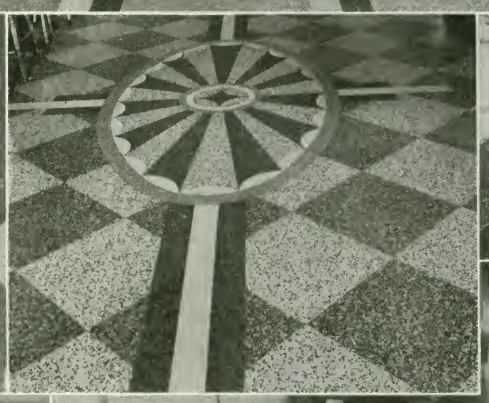
Terrazzo Floors in

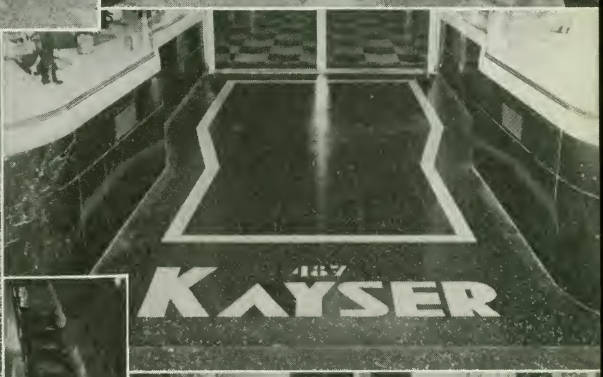
STORES AND RESTAURANTS

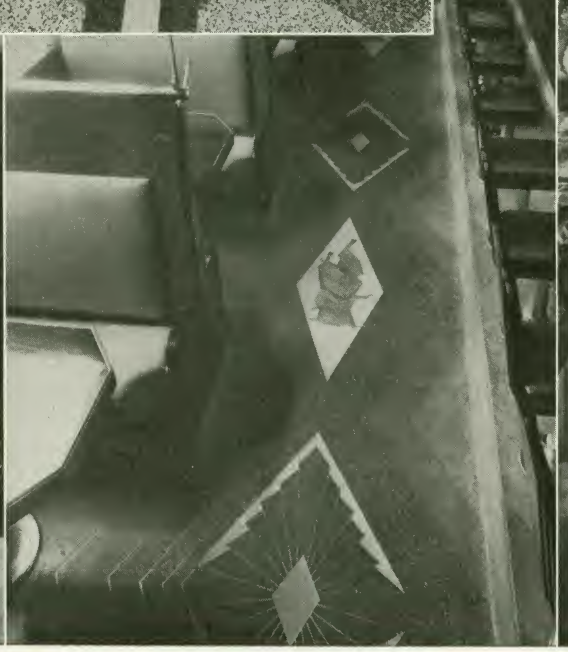
The application of Terrazzo in stores and restaurants serves a two-fold purpose; attraction value and ease of maintenance. Terrazzo resists wear, pleases the eye, and its sparkling beauty creates a pleasing impression in the mind of the potential customer. The illustrations shown on this page suggest some unusual methods of employing terrazzo effectively and attractively. *Low first cost — low maintenance cost — years of service.*







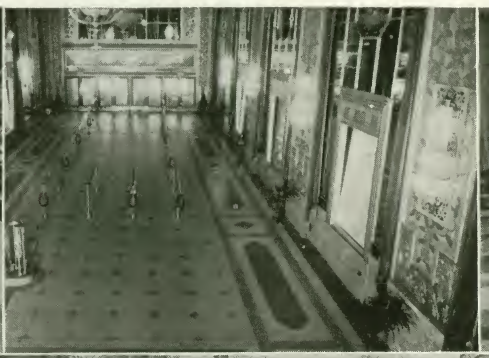


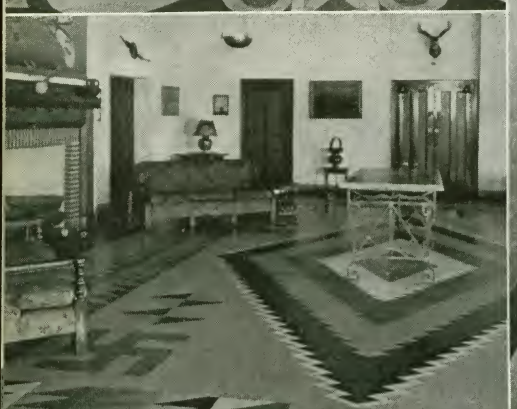


11/24 *Terrazzo Floors in*

LOBBIES AND CORRIDORS

Terrazzo floors are extremely practical, less slippery than most floors, owing to the cement contained, and may be enriched with ornamental borders and motives of marble mosaic. Inserts of cast metal, flush or in relief add to the attraction value. The use of dividing strips in the floors shown on this page separate the different color areas and outline the various parts of the designs to advantage. Entrances and hallways leave distinct impressions — make them pleasing with terrazzo designs.

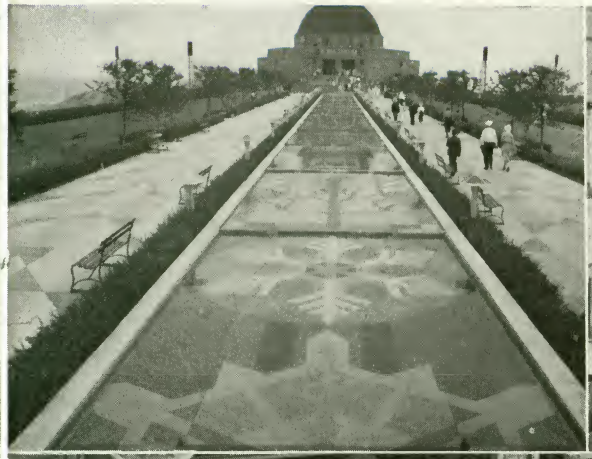


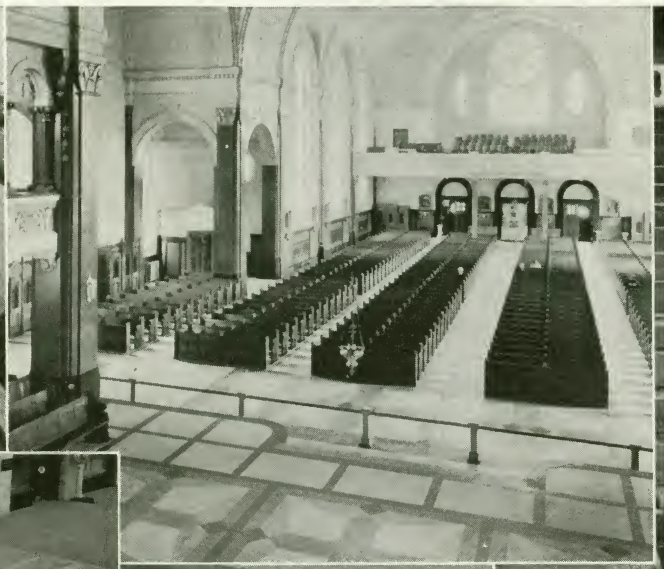


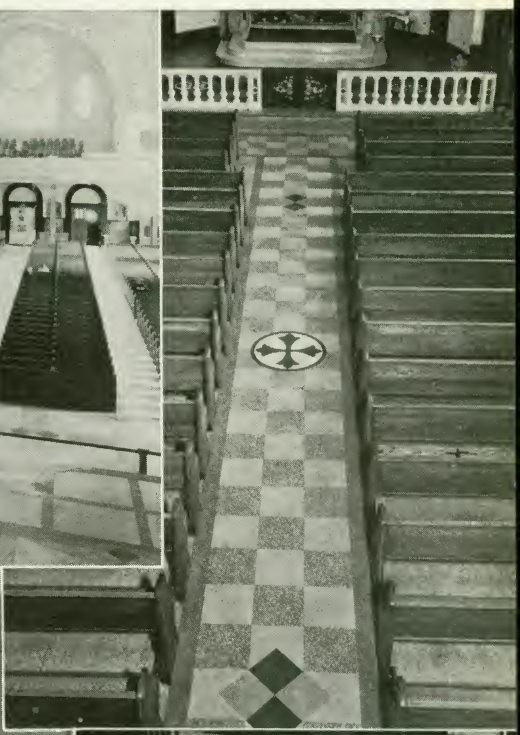
Terrazzo Floors in

MISCELLANEOUS PUBLIC SPACES

Areas subjected to severe wear — churches — sidewalks and similar public spaces are ideal locations for terrazzo work. Beauty, combined with low maintenance cost makes terrazzo the logical choice where attractiveness is an asset. The flexibility of terrazzo allows the architect great freedom in creating a design in keeping with surroundings. The illustrations shown on this page illustrate typical modern treatments employing terrazzo effectively.





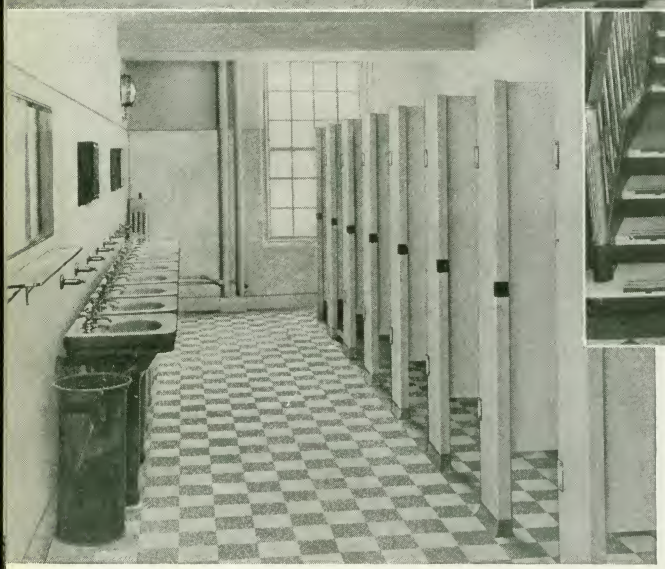


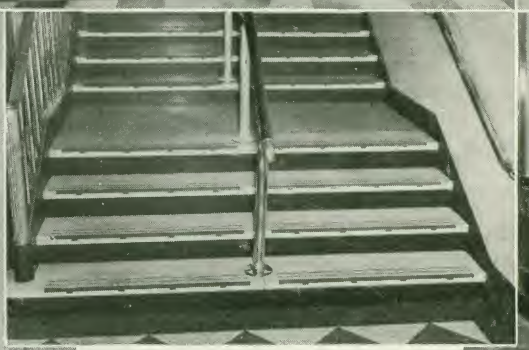
11/24

TERRAZZO FOR

WAINSCOTING • PARTITIONS • STAIRS

The use of terrazzo for wainscoting and partitions presents an entirely new field for the architect. When used for these purposes, terrazzo is run plastic the same as plaster. This prevents any possibility of the walls working loose and gives an excellent appearing installation. Stair treads, a common usage, are usually precast and finished at the shop and set at the building in the same manner as marble. They may, however, be installed in mastic form on the job. The use of an aggregate in the making of stair treads makes them non-slip and wear resistant, enabling the architect to combine the beauty of terrazzo with the non-slip advantages of an abrasive stair tread.





Note: The example of terrazzo wainscote (shown at the right) is part of a permanent terrazzo display installed in the Procurement Division, Washington, D. C. by the National Terrazzo and Mosaic Association. This display is only one of many and represents the materials of no single manufacturer.

Photo at right: Copyrighted by Harris & Ewing.

TERRAZZO FOR SWIMMING POOLS

The use of terrazzo in designing decorative effects for swimming pools may be traced back to ancient Venetian times. Excavations in and around Venice in recent years have unearthed swimming pools employing intricate designs executed in terrazzo. The adaptation of terrazzo to modern swimming pools gives the architect free rein in creating a pool that will harmonize with any design motive employed elsewhere in the building, or he may deviate from other designs and perhaps employ a marine motive, with equal success. Whatever the design terrazzo assures faithful reproduction.

HOSPITAL GRILLES

Where terrazzo is used in surgical operating rooms, anaesthesia rooms or allied rooms and corridors, the floors should be divided by metal strips of fairly heavy thickness into small squares or tiles. All strips should be connected to make positive electrical contact at all intersections, and the entire system should be grounded to water pipe or some other suitable conductor. This will prevent any danger of electric spark due to potential difference igniting any gas which may be present around the patient who is under anaesthesia on the operating table.

Concerning this subject, the National Board of Fire Underwriters states and recommends as follows: "The most elusive form of ignition of an anaesthetizing gas or vapor is the static spark. To guard against this hazard, insulating material should be avoided and machines, tables, patients and operators bonded together and to the floor and the latter thoroughly grounded."

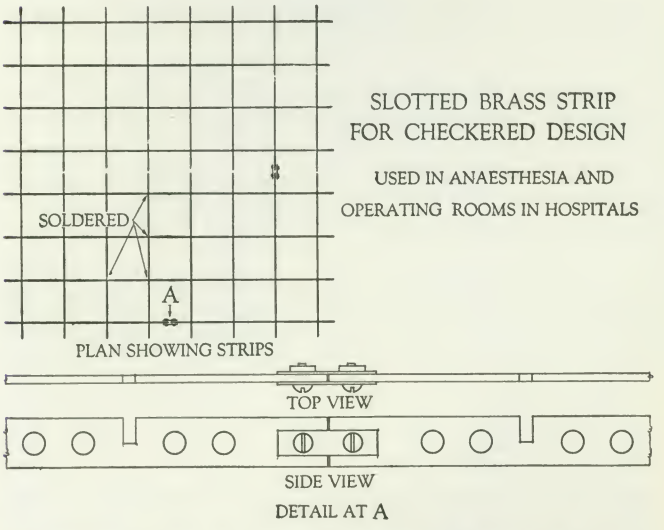
The Manhattan system of grounding for the elimination of static has been in use for many years in conjunction with terrazzo, tile and composition floors. Many hospitals over the entire country have included these grilles in their specifications, realizing their vital importance.

The grilles are available in 4, 5 and 6-in. squares for terrazzo and composition floors—6-in. squares are recommended for economy. For tile floors the squares are usually ½-in. larger than the individual tiles. Squares of the above size are small enough to assure contact with the foot of a small person.

Heavy metal is essential for a good contact. 1/16 to ⅛-in. brass or white alloy zinc has mainly been used. The depths are as follows: ¾, 1 or 1¼ in. for terrazzo; 1 or 1¼ in. for tile and ⅝ in. for composition floors (fitted for nailing to the floor). **For terrazzo, ¾ x ⅛-in. brass is recommended in 6-in. grilles.**

The strips are slotted and soldered so that they are united electrically. The grounding is completed by connecting the system in each room or corridor with a water or steam pipe. The grilles are shipped in sections approximately 36x36 ins. and are joined on the job by brass bars and bolts. The assembly and grounding of the units requires comparatively little labor, as each section is numbered and an assembly drawing is supplied to every job.

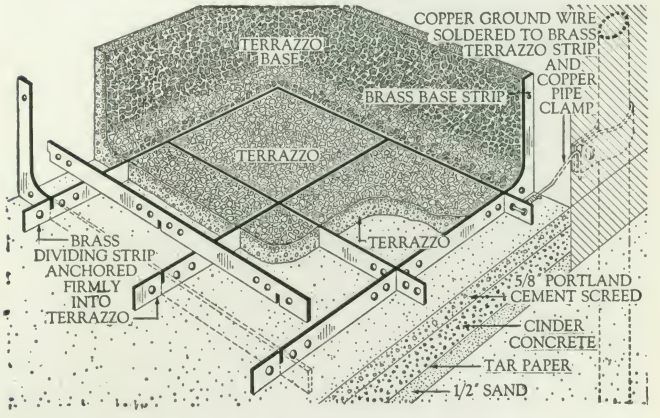
Operating Room with Manhattan Hospital Grilles in Floor, Doctors Hospital, New York, N. Y.



Method of Bolting Sections Together to Form One Unit

INSTALLATIONS

Brooklyn Hospital, Brooklyn, N. Y.
Big Sisters Hospital, Ventura, Calif.
Charlotte Hungerford Hospital, Torrington, Conn.
Doctors Hospital, New York, N. Y.
Delsin Sanitarium, Brooklyn, N. Y.
Easton Hospital, Easton, Pa.
Foote Memorial Hospital, Jackson, Mich.
Glen Lake Sanatorium, Glen Lake, Minn.
Holy Name of Jesus Hospital, Gadsden, Ala.
Hillman Hospital, Birmingham, Ala.
Harbor View Hospital, Seattle, Wash.
Hospital of State University of Iowa, Iowa City, Iowa
Kings County Hospital, Brooklyn, N. Y.
New Hospital of Penn Industrial Reformatory, Huntingdon, Pa.
U. S. Veterans' Hospital, Mt. Alto, Washington, D. C.
U. S. Veterans' National Home Hospital, Milwaukee, Wis.

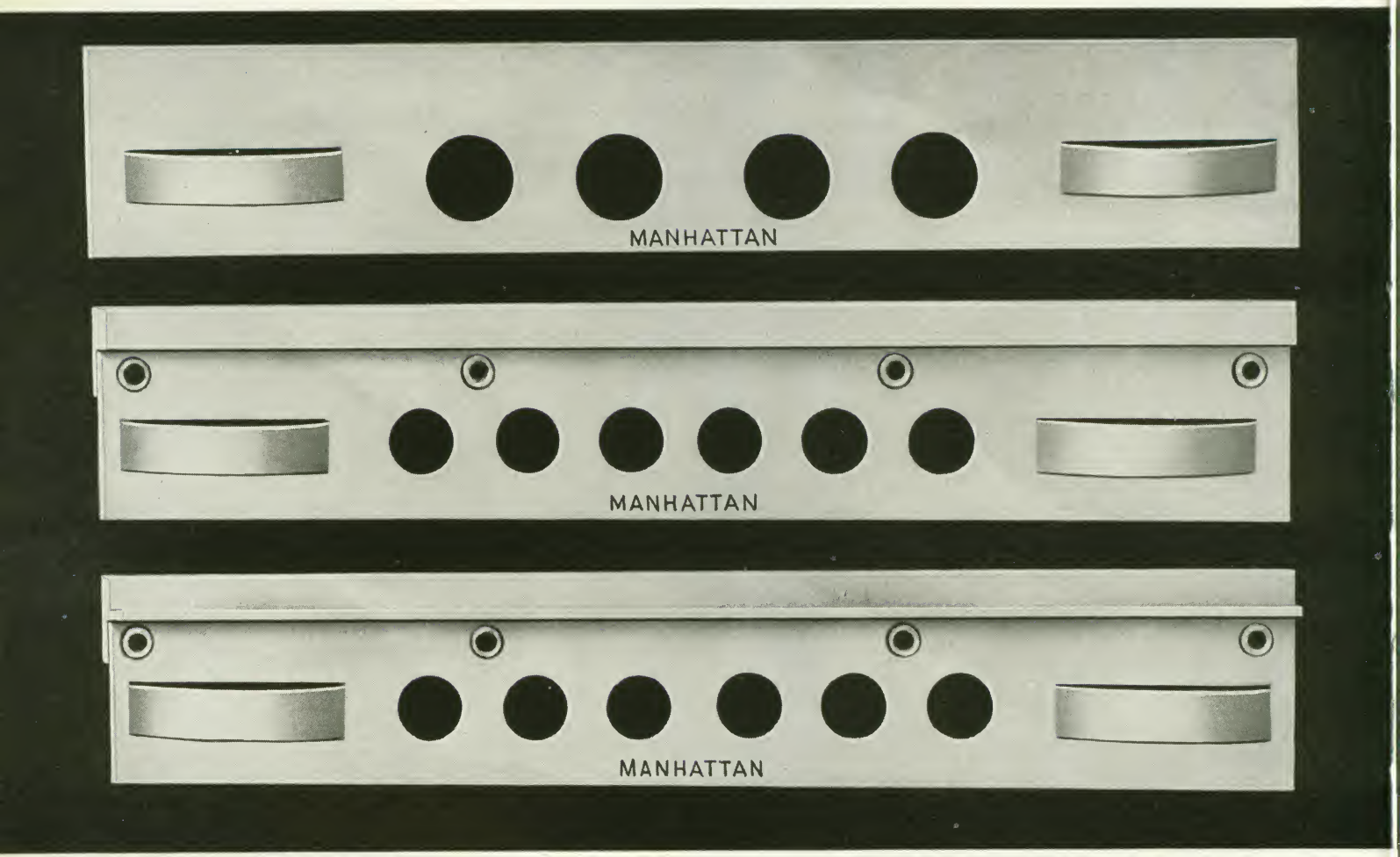


Details Showing Application of Hospital Grilles

11/24

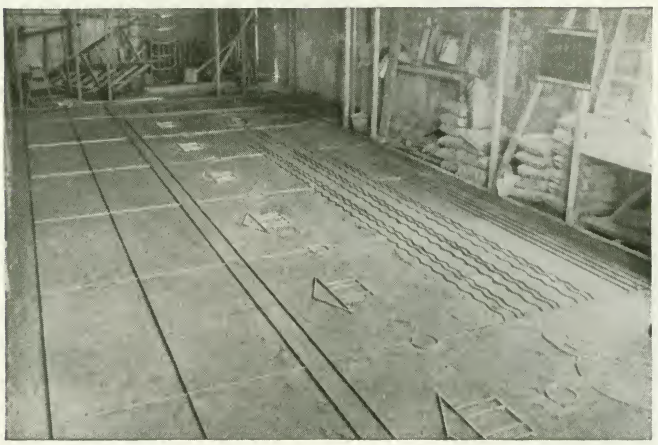
MANHATTAN TERRAZZO STRIPS

IN BRASS, WHITE ALLOY (ZINC), AND NICKEL SILVER



Top: Standard Strip—Type B, Center: Heavy Top Strip, Bottom: Strip for Linoleum, Rubber and Asphalt Tile Walkways

MANHATTAN TERRAZZO STRIPS MADE THIS DESIGN POSSIBLE



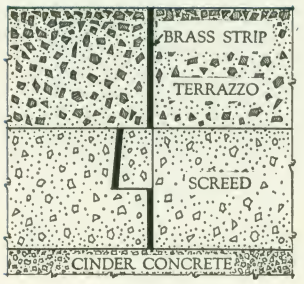
The use of dividing strips, in straight and curved shapes, of this modern bake shop floor are clearly evident. The photograph at the left shows the strips in place prior to the laying of the finished floor. The picture at the right shows the completed installation viewed from almost the same spot. The pleasing design is at once apparent. For food stores of any description terrazzo is unexcelled. It personifies cleanliness, is beautiful in appearance and its ease of maintenance makes it the ideal floor material. The use of Manhattan Dividing Strips will enhance the beauty of the design employed, and greatly add to the attraction value.

MANHATTAN TERRAZZO STRIPS

STANDARD STRIP TYPE B

For terrazzo designs of all kinds, the simplest, most pliable, economical and easily handled Manhattan Strip is the Type B Twin Anchor Brand. Made of brass (semi-hard), nickel-silver and white alloy (zinc) in various B&S gauges, and widths. Also in bronze and copper on special order.

The metal is rigid vertically, but sufficiently pliable horizontally to permit its conforming to practically any desired figures, shapes and designs. **The *curved projections* which are integral parts of the strip, positively anchor in the *screed* and do not depend on the finish coat of terrazo to keep them in place.** The arc anchor does not form air pockets which result in cracking of the terrazzo. There is an angular incline to the arc so that when it penetrates the screed it shears off or displaces the screed, forcing it sideways through the opening, thus forming the lock. With this firm anchorage the strips cannot get out of line, horizontally or vertically, even while applying and rolling the terrazzo aggregate. The punched holes in the strip provide an additional lock.



Full Size Section Taken Through Arc Anchor

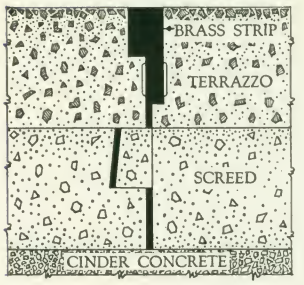
HEAVY TOP STRIP

Provides a wide wearing surface without the prohibitive cost of material and handling of a solid strip of the same thickness, saving in metal approximately 35% to 50% depending on the gauge used. It also has the advantage of shaping up easily for special design work.

Furnished with *brass, nickel-silver* or white alloy (zinc) top securely riveted to a bottom strip which is identical to the Type B strip. The bottom strip used with the brass top is of 20 B&S gauge brass, whereas it is made of 18 B&S gauge white alloy (zinc) for use with the nickel-silver top. Tops are available in $\frac{1}{8}$, $\frac{3}{16}$ and $\frac{1}{4}$-in. thicknesses. $\frac{3}{8}$ and $\frac{1}{2}$-in. tops may also be had but of a different construction. The total width of all sizes of strips is approximately $1\frac{1}{4}$ in. Also furnished in widths of 1 and $1\frac{1}{2}$ in. on short notice. All sizes are furnished in 6-ft. lengths only.

The bottom strip and heavy top is assembled by means of eyelet rivets (method fully covered by patents) spaced 2 in. apart. This method of fastening is firm and there is no danger of the assembly working loose or separating, either during installation or after the floor is completed and in use.

The bottom strip, being identical to the Type B, imparts to this heavy top all the features and advantages of the thin strip.



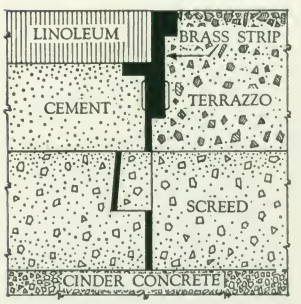
Full Size Section Taken Through Arc Anchor

STRIP FOR LINOLEUM, RUBBER AND ASPHALT TILE WALKWAYS

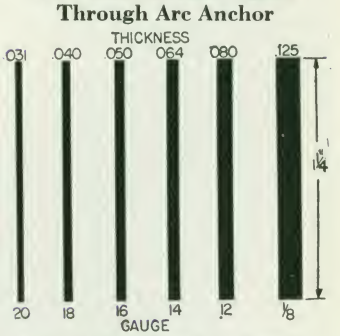
Recommended where it is desired to provide a walkway surface between terrazzo borders or cove bases. Constructed the same as the heavy top with the exception that an offset or projection below the top of the strip extends from the strip on one side. This projection provides a bearing surface for the linoleum at the proper depth to permit the surfaces of the linoleum and brass strip to be flush.

This strip is made of brass and white alloy (zinc) in the following sizes: $\frac{1}{8}$-in. top for $\frac{3}{16}$ and $\frac{1}{4}$-in. linoleum and $\frac{3}{16}$-in. top for $\frac{1}{4}$-in. linoleum. Furnished in 6-ft. lengths only.

Points of Advantage—The strip provides an integral unit for receiving the linoleum, rubber or asphalt tile and provides a perfect abutment for the terrazzo border. The projection acts as a depth gauge for the cement finisher, which results in the linoleum, terrazzo border and brass strip being at *exactly the same level.* Cracking of the terrazzo border is controlled as in large floor areas where strips are used, and cracks in the screed under the linoleum are prevented from extending into the terrazzo border. The previously mentioned features of anchorage and rivet assembly also apply to this strip.



Full Size Section Taken Through Arc Anchor

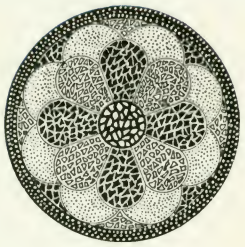


Actual Thickness of Standard Strip (B & S gauge)

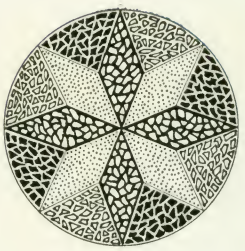
Specify Manhattan, or equal, and you are assured of the best

TERRAZZO FLOOR ACCESSORIES

CENTERPIECES

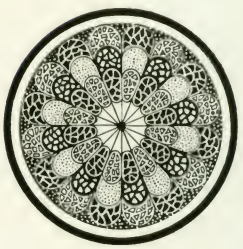


C-2



C-3

C-5



C-8

SOLID INSERTS

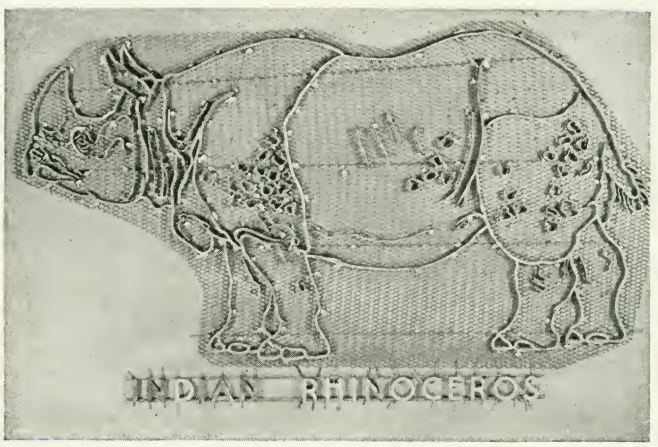
LETTERS

Script

ABCDEF

GHIJKL

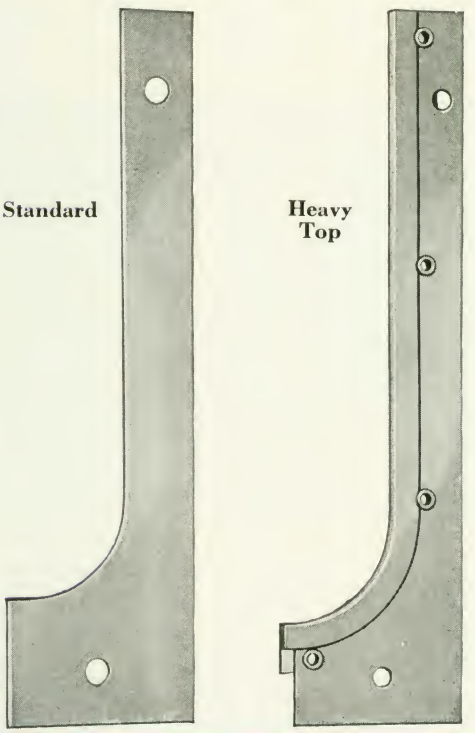
DESIGNS



The terrazzo accessories shown on this page play an important part in the creation of attractive and unusually decorative effects. We specialize in executing the unusual for store entrances and similar applications. For additional information, write direct.

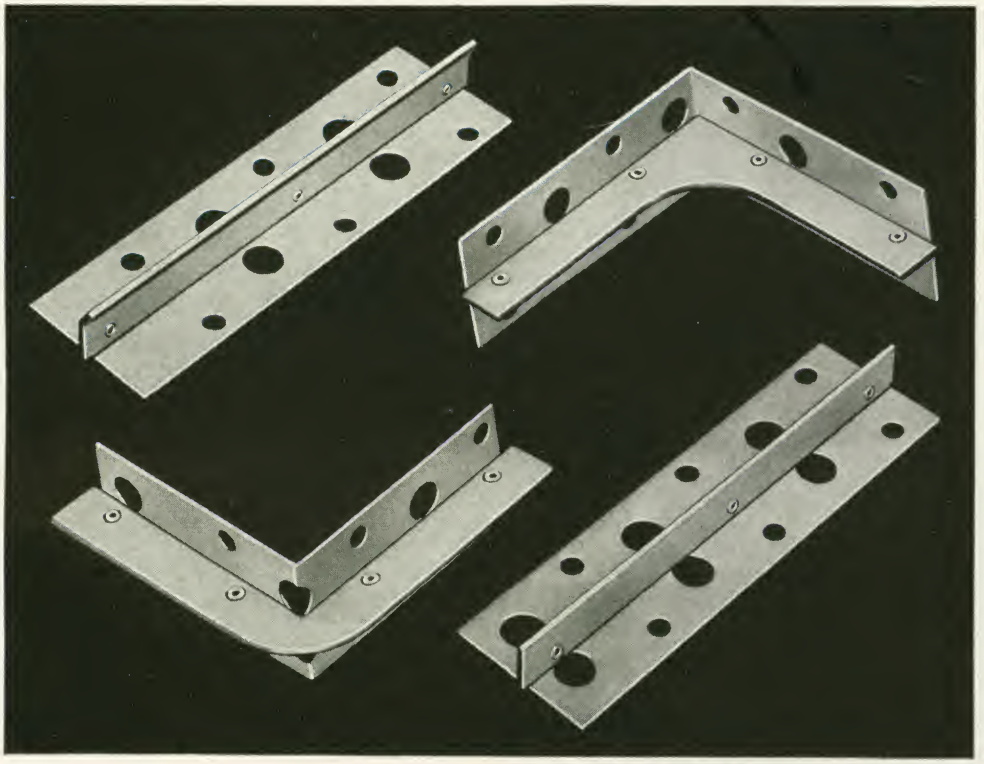
COVE DIVIDERS

Brass and White Alloy (Zinc)

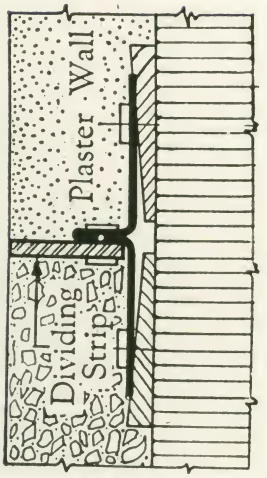


MANHATTAN BASE BEADS AND CORNERS

FLUSH AND PROJECTING TYPE



Base Beads and Corners are Furnished in Brass and White Alloy Zinc or other non-corrosive metal.

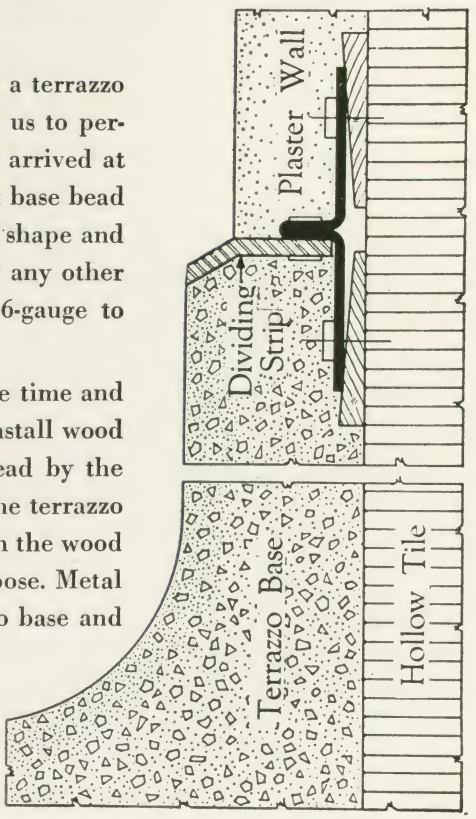


Flush Type

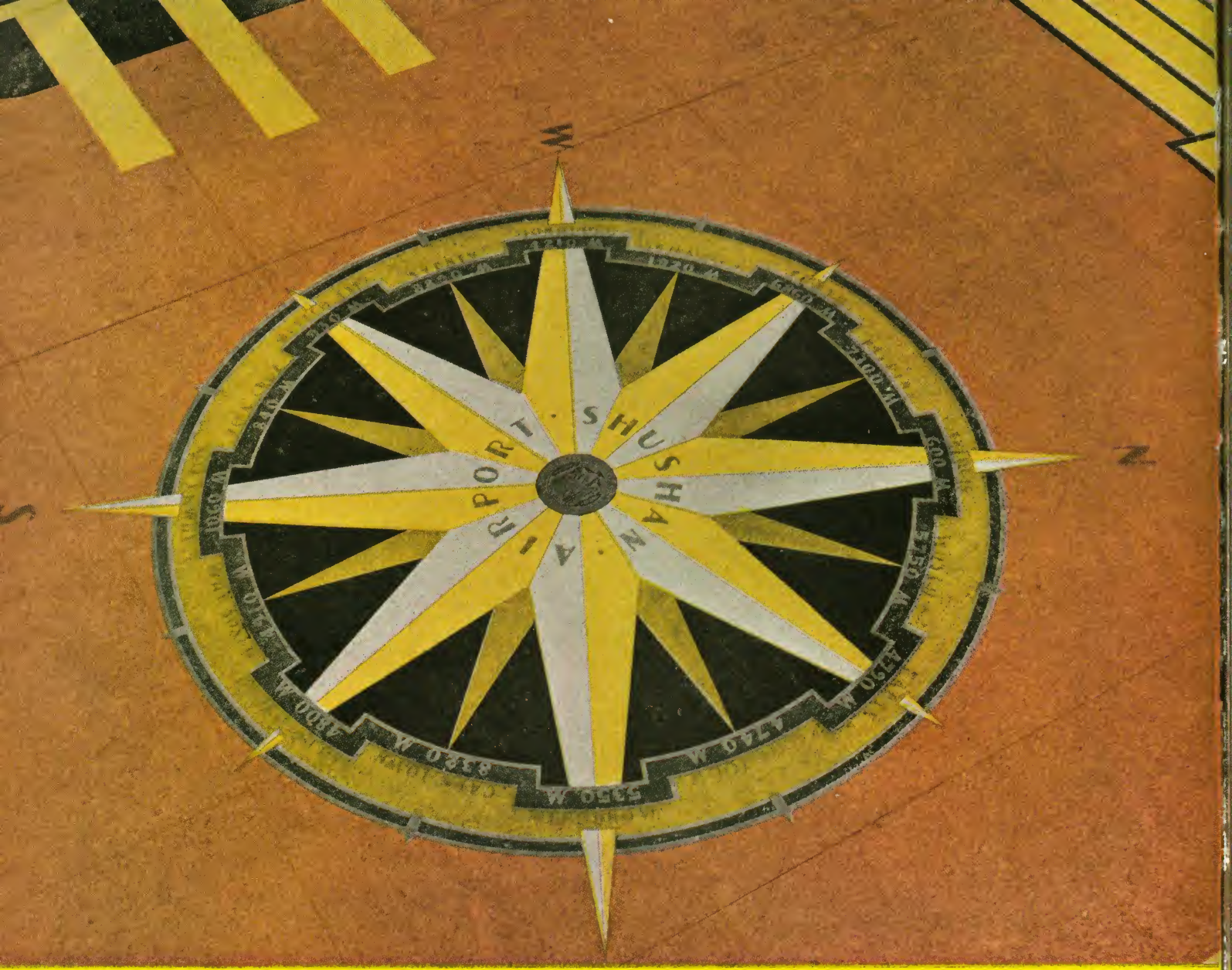
It is frequently desirable, when installing a terrazzo floor, to install a terrazzo base as well. The possibilities of terrazzo as a base material have lead us to perfect a noncorrosive base bead. After considerable experimentation, we arrived at the two types of base beads shown on this page which admirably fill all base bead requirements. The bottom member is made of galvanized metal in "T" shape and to the leg of this member we fasten strips of brass, white alloy zinc or any other noncorrosive metal that may be specified, of any thickness from 16-gauge to ¼ inch furnished in 10 foot lengths.

A base bead of this type enables the contractor to save considerable time and money. Before the development of this base bead, it was necessary to install wood grounds for the terrazzo base. The installation of this metal base bead by the furring and lathing man ended a long standing controversy between the terrazzo man and the plasterer as to who should install the wood ground. When the wood grounds were removed they were a total loss and served no useful purpose. Metal base beads, on the other hand, serve as a ground for both the terrazzo base and the plaster of the wall. They also make a permanent dividing line between the base and the plaster as well as showing up as a decorative strip in harmony with other dividing strips in the base and floor.

When specifying, mention Type G (flush or projecting type) in . . gauge as manufactured by Manhattan Terrazzo Brass Strip Company.



Projecting Type
Method of Installation



MANHATTAN TERRAZZO BRASS STRIP CO., INC.

1915 PARK AVENUE, NEW YORK, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

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NORTON COMPANY

Alundum Aggregates for Non-slip Terrazzo and Cement Floors and Stairs
Alundum Floor and Stair Tile and Ceramic Mosaic Tile
WORCESTER, MASS.

ALUNDUM AGGREGATE FOR TERRAZZO

Description—Alundum Aggregate is identical in composition and structure with Alundum Tiles but is crushed in convenient sizes for use in terrazzo. When employed as recommended it provides dependable safety—terrazzo floors and stairs that are effectively non-slip, wet or dry. Its hardness assures high serviceability and its non-resonant quality makes terrazzo floors quiet and comfortable.

SIZES AND COLORS

Class	Sizes, in.	Aggregate colors
No. 1-C No. 00	$\frac{3}{32}$—¼ $\frac{1}{64}$—$\frac{3}{32}$	Brown, Gray, Buff, Cream, Green, Red, Black

Monolithic Terrazzo

Complete specifications for the installation of Alundum Aggregate in monolithic terrazzo floors and ramps are given in Catalog C, a copy of which will be furnished on request. These specifications, if properly followed, should result in a good terrazzo job with adequate non-slipping efficiency.

It is urgently recommended that architects clearly specify their desires regarding terrazzo and then see that the installing contractor lives up to them.

Terrazzo Made Non-slip by Alundum Aggregate in a Post Office Lobby

Precast Terrazzo

For many buildings, terrazzo in the form of precast tiles and treads or art marble, is preferred instead of terrazzo poured plastic on the job. It is recommended that Alundum Aggregate be always used in precast treads to make them dependably non-slip and in precast tile when it is used on ramps, where water is likely to be present, or in other locations where there would be a slipping hazard with ordinary terrazzo. Precast tiles and treads should be made by concerns having suitable experience in the work and equipped with proper machinery to produce a quality product.

NORTON COMPANY has made arrangements with qualified firms throughout the country for the use of Alundum Aggregate in precast products and will be glad to furnish their names and addresses upon request.

Specifications—Catalog C also gives complete specifications for the use of Alundum Aggregate in precast treads and platforms and in precast tile.

Precast Alundum Aggregate Treads on an Auditorium Stairway

ALUNDUM CEMENT FLOOR AGGREGATE

Description—Designated as Alundum (C.F.) Aggregate it is the same as terrazzo aggregate except harder and tougher and not made in colors.

Uses—Alundum (C.F.) Aggregate is used in cement finish floors, stairs, ramps and sidewalks. Because its angular, slightly porous structure provides greater bonding power with cement this aggregate is more effective than abrasive grain—providing a more non-slip and durable surface.

Sizes—Coarse, ¼ to ½ in. Fine, $\frac{3}{32}$ to ¼ in.

Specifications—Complete specification data on use of Alundum (C.F.) Aggregate in cement floors and stairs and also in asphalt floors is given in Catalog D. Copy on request.

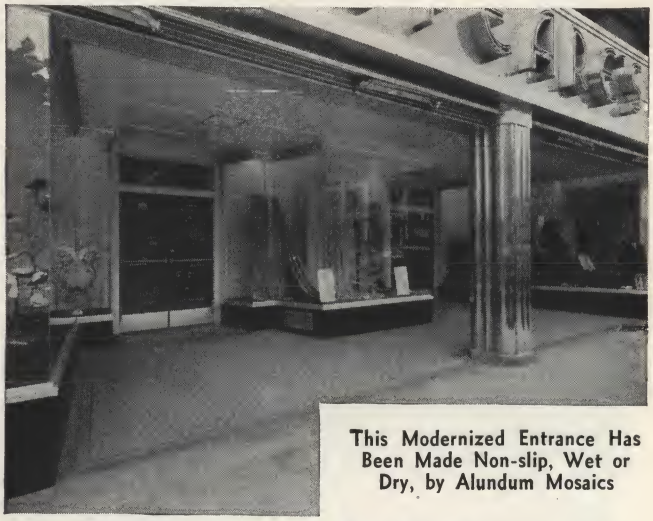
ALUNDUM TILES (FLOOR, STAIR, CERAMIC MOSAICS)

Description—Alundum Tiles are composed of aluminum oxide abrasive (Al_2O_3)) bonded by special clays to produce a structure which assures permanent safety and exceptional resistance to wear. Water, oil and other liquids do not lessen the non-slip effectiveness of Alundum Tiles. They are not affected by climatic changes or acids, except hydrofluoric.

Guarantee—Norton Alundum Tile is guaranteed (1) against defects in material or workmanship; (2) to retain its non-slip properties throughout its entire life if it is kept free from an accumulation of dirt or other foreign substances; (3) for a period of ten years against wear resulting from foot traffic making replacement necessary.

Uses—Alundum Tiles (floor, stair and mosaics) are for use wherever there is a slipping hazard to overcome and wherever exceptional resistance to wear is desirable—vestibules, stairs, showers, swimming pools, kitchens and similar places in schools, hospitals, theaters, industrial plants and other public or commercial buildings.

Specifications—Complete specification data on Alundum Stair and Floor Tile and Alundum Ceramic Mosaic Tile is given in Catalogs A and B, respectively, copies on request.



This Modernized Entrance Has Been Made Non-slip, Wet or Dry, by Alundum Mosaics

ALUNDUM FLOOR AND STAIR TILE

Floor Tile		Stair Tile	
3 x 1½ x ½ in.	3 x 3 x ½ in.	6 x 4 x ½ in.	6 x 4 x ¾ in.
6 x 3 x ½ in.	6 x 6 x ½ in.	6 x 6 x ½ in.	6 x 6 x ¾ in.
6 x 3 x ¾ in.	6 x 6 x ¾ in.	7 x 7 x ⅝ in.	9 x 6 x ¾ in.
9 x 4 x ¾ in.	9 x 6 x ¾ in.	9 x 4 x ¾ in.	12 x 12 x 1¼ in.
SPECIAL SIZES		SPECIAL SIZES	
7 x 3½ in.	12 x 12 in.	6 x 6 x 1¼ in.	7 x 7 x 1 in.
	2-in. hexagonal	7 x 7 x 1¼ in.	9 x 4 x 1 in.
		9 x 6 x 1¼ in.	9 x 6 x 1 in.

ALUNDUM CERAMIC MOSAIC TILE

¾-in. square 1$\frac{1}{16}$-in. square	1-in. hexagonal 1¼ in. hexagonal	1$\frac{1}{16}$x2¼ in. oblong

Colors—Brown, Buff, Gray, Blue-gray, White Granite, Green, Tan, Red, Black.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION

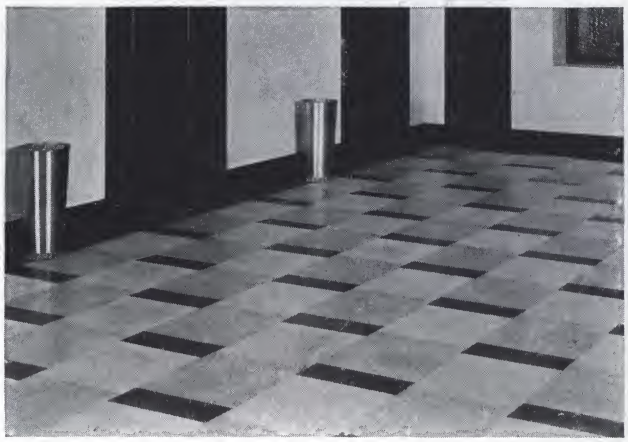
1406 G Street, NW., WASHINGTON, D. C.

THE USES OF TERRAZZO

Floors

Terrazzo, richly colorful, placed in *any design,* and extremely durable, finds principal use as a flooring material. The range of *color* in marble chips, pigments and divider strips used in terrazzo, plus the use of white portland cement, enables the designer to plan floors that carry out the exact color scheme of any interior. In interior *design,* whatever motif is created for walls and furnishings may be continued in harmonizing pattern in a floor of terrazzo. And terrazzo's surface (approximately 75% marble, 25% portland cement matrix) is smooth and hard, free from breaks, easy to clean, hard to mar or stain, *wear-resistant* under heaviest traffic.

Because they retain their original fine appearance under severe wear with minimum upkeep, terrazzo floors find wide use in public and commercial structures. Floors in vestibules, lobbies, corridors and offices; floors in halls, private rooms and wards, sun parlors, operating rooms, laboratories; floors in display and sales rooms; floors in dining rooms and kitchens, ballrooms, lounges and barrooms; floors in lavatories, bathrooms, shower and steam rooms; floors in classrooms and dormitories; floors in creameries and freezing rooms — these are some of the floors that are built of terrazzo for economy, service and appearance.



Harmonizing pattern in floor of terrazzo economically carries out color scheme of interior

Corridor floors and cove of terrazzo are easy to keep clean

And with their acceptance so definitely established terrazzo floors are finding wider acceptance in homes. Wherever a floor needs to be good-looking to wear like concrete and to be economical to install and maintain, terrazzo meets all requirements.

Terrazzo shaped to desired form makes durable steps

Stairs and Ramps

The durability, excellent appearance and economy which make terrazzo a fine floor material qualify it particularly for stairs and ramps. Because terrazzo is placed, in a plastic condition, it may be shaped to any desired form. Or it may be pre-cast for special shapes and placed in units. It is advantageous to add abrasive aggregates to the terrazzo mix, so that the final surface is proof against slipping or sliding.

Coves and Bases

Of special value where utmost cleanliness is essential, as in hospitals, laboratories, kitchens, are coves and bases made of terrazzo. Because the floor and cove or base are monolithic, there are no cracks or breaks to collect dirt.

Striking terrazzo design used with terrazzo flooring

Partitions and Wainscots

Placed on metal studding and lath over a scratch coat of portland cement and sand, partitions of terrazzo serve exceptionally well in shower rooms, toilet rooms, and for similar installations.

For wainscots, terrazzo may be applied to any height against any type of wall backing, over a scratch coat of portland cement and sand. Wainscots may be extended directly up from coving.

Both partitions and wainscots may be installed on the job, or pre-cast.

The range of ornamental effects possible with terrazzo is unlimited

Ornamental Units

Ornamental terrazzo, though usually job made, is sometimes pre-cast. It may take any desired form — from statuary to table tops. It is often used in connection with terrazzo flooring, being designed and colored to harmonize with the floor.

Sidewalks

One of terrazzo's newest uses, and a use which holds promise of unusual development, is in the sidewalk. While commercial use of terrazzo for this purpose waits upon designers' enterprise, the increasing number of entrances to stores and buildings, outdoor dance floors, the colorful walks of Rio de Janiero and the walkways and esplanade leading to the Adler Planetarium in Chicago continue to prove terrazzo's durability and beauty in outdoor installation.

Colorful entrance to commercial building job made from terrazzo

PASCAL SYLVESTER COMPANY

Originators of Metal Designs for Terrazzo Work

413 West Chicago Avenue
CHICAGO, ILL.
TELEPHONE, SUPERIOR 9782-3

Our strips are manufactured and sold exclusively through Revere Copper and Brass, Inc.

Company

Our company is an organization composed of craftsmen who have had 20 years' experience in metal strips. We are one of the oldest, if not the oldest in our field, and we have worked with terrazzo and cement industries for many years to perfect metal strips. We have had the privilege of serving leaders in the building profession throughout the nation because of our ability, experience and service.

Products

Brass Strips
White Metal Strips
Colored Rubber Strips
Hospital Grilles
Prefabricated Design Units
Names, Trade Marks, etc.

Facilities

Our plant is especially equipped to take care of all requirements for the fabrication of metal and rubber strip design work.

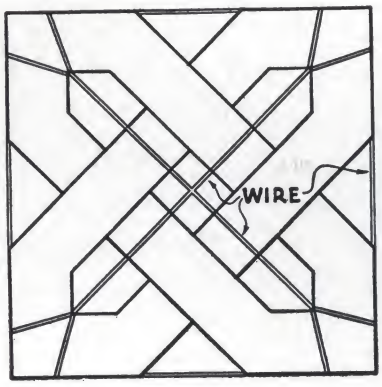
A highly trained experienced personnel and craftsmen handle orders for shipment anywhere in the United States. Straight Strips are handled nationally through our factory and warehouse connections.

Service

We offer sketches, estimates and our experience at no obligation to architects and our customers. Through our arrangement with Revere Copper and Brass, Inc., a substantial stock of strip is carried on hand at all times for prompt shipment.

SYLVESTER DESIGN

Illustration at left shows plan of an assembled strip unit.



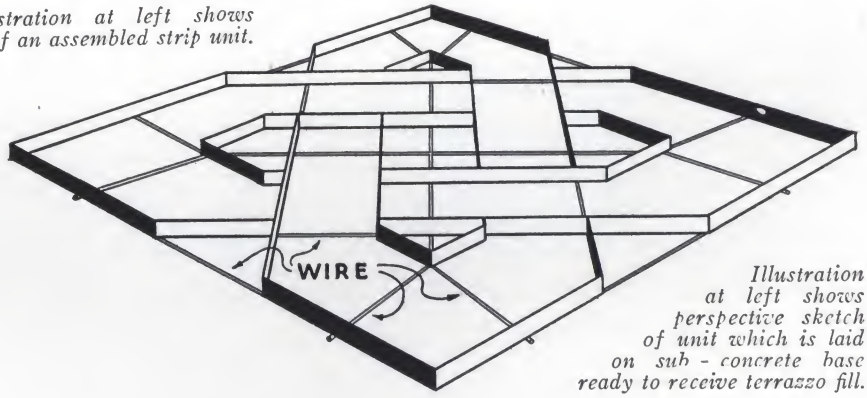


Illustration at left shows perspective sketch of unit which is laid on sub - concrete base ready to receive terrazzo fill.

We specialize in prefabricated design units manufactured under our patented system as illustrated above. Our U. S. Patent No. 1689164 issued October 23, 1928, covers our method, which we believe is second to none and which covers all types of metal made up in designs either at factory or at job.

Our design work consists of carrying out the finest detail in connection with names, trade marks, coat of arms, borders and any kind of design unit for decorative purposes.

Our patented method of securing the metal strips to one another assures rigidity and great accuracy in all detail; furthermore our method assures a perfect finished job on account of simplicity of installation.

Our design department consists of expert craftsmen whose purpose is to interpret architects' drawings or sketches in the most faithful manner.

We have had the privilege of serving leading architects throughout the country for many years and also have had the privilege of working with the cement association and industry on research work in this field.

Specification

All design work consisting of: (fill in exact requirements as per suggestions below or as required)

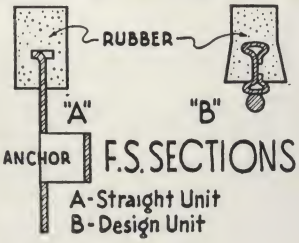
.....

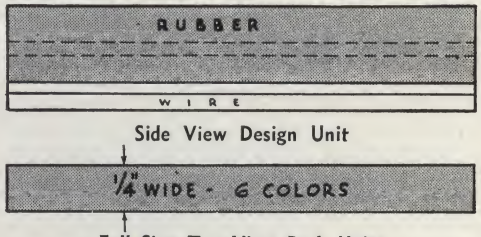
(1) Design Units. (2) Borders. (3) Names. (4) Monograms. (5) Hospital Grilles, etc., shall be fabricated from ..... gauge ..... metal, and executed as per the architect's designs. All strips shall be firmly anchored and fit perfectly. Top edges shall be level and free from defects. All work shall be made in accordance with Sylvester Patent System of Design Work.

This work shall be provided by terrazzo contractor.

SYLVESTER RUBBER STRIPS

Side View Straight Unit





Side View Design Unit

Full Size Top View Both Units

Our rubber strips is a development after years of experimental work which developed from our special skating rink strip. Our rubber strip utilizes a live rubber strip to take care of expansion and contraction and we believe it is the only strip of its kind designed for this purpose. In addition to the above factors our rubber strip offers beautiful colors. Color strips are ¼ in. wide. The rubber strip has non-slip features which also make it very desirable. The rubber strip is securely anchored to the metal strip below, which is a special 18-gauge unit designed to work with our rubber strip. Our straight rubber strip will bend to take care of any special curve, and we have also perfected them for prefabricated design units.

Specification—Rubber strips, as shown on drawings, shall be as manufactured by PASCAL SYLVESTER COMPANY and shall be ¼ in. wide on top surfaces and in color selected. Rubber top of either straight or designed strips shall be securely anchored to metal sub-strips. Metal sub-strips shall be as detailed and provided with anchors to secure same in cement bed.

SYLVESTER STRAIGHT METAL STRIPS

No. 1 FS. Detail Sylvester Standard Strip

Standard Strips

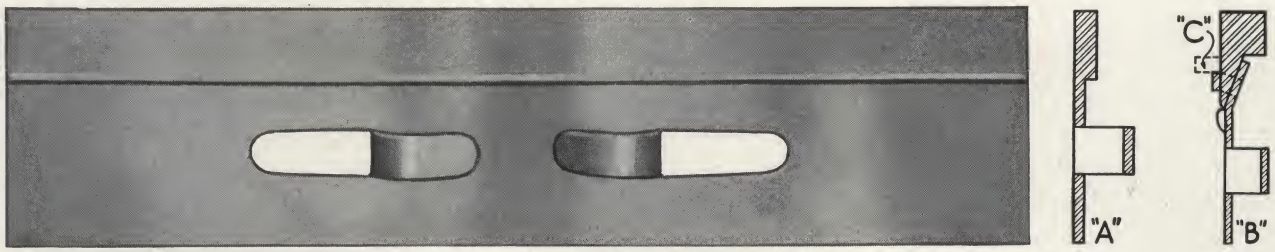
Our standard strips illustrated above in full size section is very simple and at the same time effective. It can be handled efficiently on the job and is well liked by craftsmen in the terrazzo industry.

The lock or key holds the strips firmly in place after cement is set.

This strip is available in all gauges of brass from 20 to 12 and also in white metal gauges 18 to 12. Strips are also available in 1 in. width. Brass strips are semi-hard stock—white metal are zinc alloys of correct hardness.

We have adequate stock of most sizes on hand in warehouses available for immediate delivery anywhere in United States.

Specification—All Standard Straight Metal Strips, shown on drawings and specified, shall be manufactured by PASCAL SYLVESTER COMPANY and installed by terrazzo contractor. Strips shall be accurately manufactured from semi-hard stock of metal selected and provided with anchors every 6 in.



No. 2 FS. Detail Sylvester Heavy Top Strip

Heavy Top Strip

Our heavy top strip is used in cases where a wide band is required on top. We have, therefore, combined a heavy top strip with an 18-gauge strip securely anchored to same. This provides economy with same results as a solid heavy strip.

Our heavy top strip is available in brass and white metal in ⅛, $\frac{3}{16}$ and ¼ in. top widths.

The brass strip is a two-piece section, securely anchored, whereas the white metal is a one-piece extruded shape.

This type of strip has same anchor as standard strip.

Specification—All Heavy Top Straight Metal Strips, shown on drawings and specified, shall be manufactured by PASCAL SYLVESTER COMPANY and installed by terrazzo contractor. Strips shall be accurately manufactured from semi-hard stock of metal selected and provided with anchors every 6 in.

No. 3 Sylvester Linoleum Type Strip

This is a special strip recommended where requirements call for linoleum on one side and terrazzo on the other. It is similar in construction to the heavy top strip, except that it has a leg set down below finished floor at proper depth to receive linoleum or other material. See Detail "C" shown above for heavy top strips.

Anchoring method for this strip is the same as for other strips.

This strip comes in brass and white metal.

Specification—All Linoleum Strips, shown on drawings and specified, shall be manufactured by PASCAL SYLVESTER COMPANY and installed by terrazzo contractor. Strips shall be accurately manufactured from semi-hard stock of metal selected and provided with anchors every 6 in.

ZANIN BRASS CORP.

Brass Strips for Terrazzo and Composition Floors

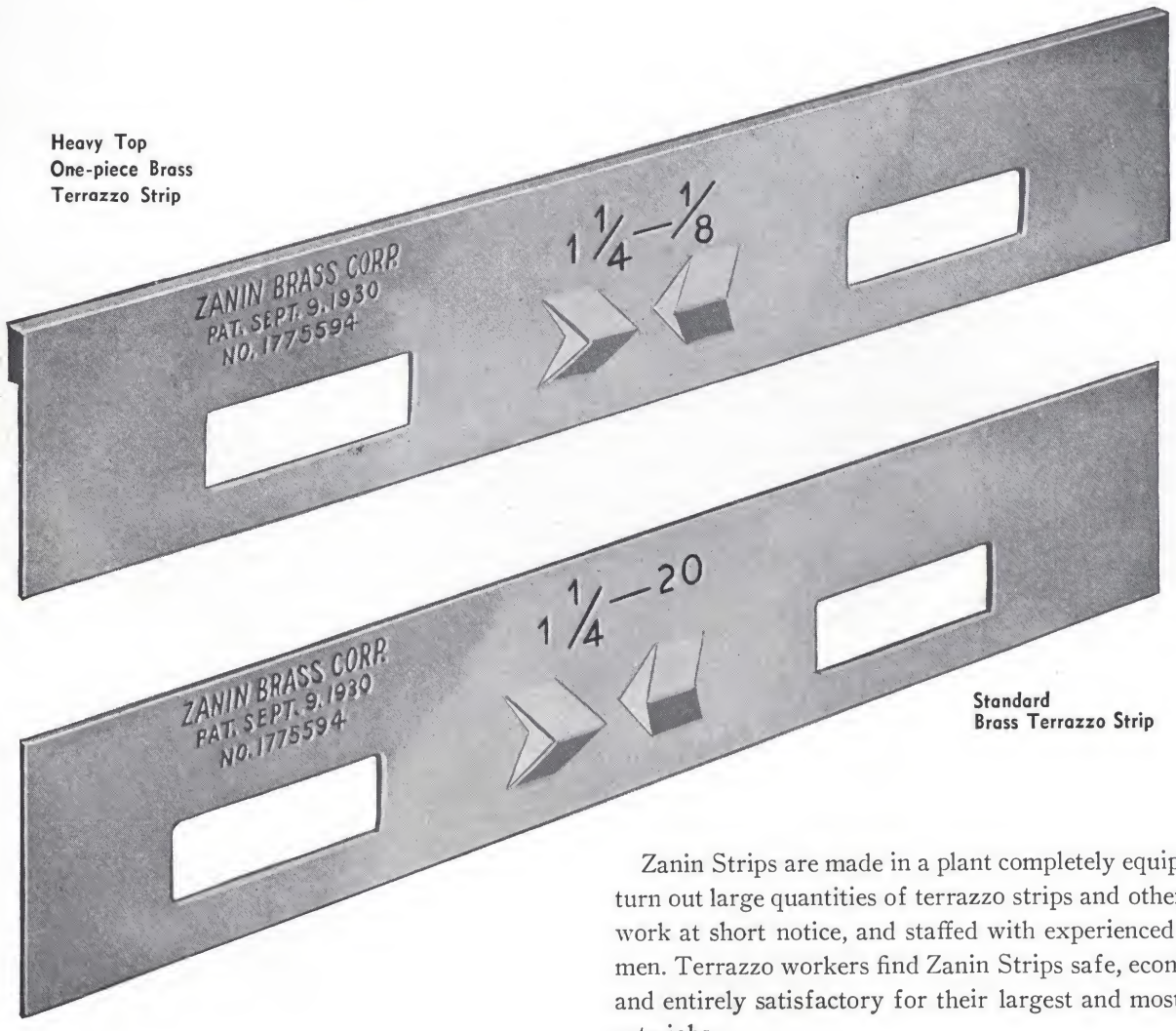
522 West 38th Street

NEW YORK, N. Y.

ZANIN HEAVY TOP BRASS TERRAZZO STRIP

This strip is all in one piece, making it impossible for the top bar to separate, which happens in cases where the top bar is attached to a lighter lower member. The fact that it is all in one piece makes it also more rigid and at the same time easier to work with when making designs. This heavy top brass strip is obtainable in 1/8, 3/16 and 1/4 inch. Our strips are manufactured under patent No. 1775594.

All Zanin Brass Strips for terrazzo, marble, composition and other floor work are made of a super-grade of strip brass and also of white alloy. They are simple in design and perfectly suited for the most complicated type of floor work. You will find them pliable horizontally and adequately rigid vertically so that they may be adapted to any design for which they may be used. The strip anchors are punched from the metal itself and offer a sure grip under all conditions.



Zanin Strips are made in a plant completely equipped to turn out large quantities of terrazzo strips and other brass work at short notice, and staffed with experienced workmen. Terrazzo workers find Zanin Strips safe, economical and entirely satisfactory for their largest and most intricate jobs.

Dimensions

All strips come in 6-foot lengths. We carry at all times a complete stock of brass and white alloy strips from 20-gauge to 12-gauge flat strips in 1 and 1¼-in. widths.

UNIVERSAL ATLAS CEMENT CO.

UNITED STATES STEEL CORPORATION SUBSIDIARY

GENERAL OFFICES

208 South LaSalle Street

CHICAGO, ILL.

PRODUCTS

ATLAS WHITE PORTLAND CEMENT
ATLAS PORTLAND CEMENT

ATLAS WATERPROOFED WHITE PORTLAND CEMENT
UNIVERSAL PORTLAND CEMENT

FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT

Made with marble chips, portland cement and water plus mineral color pigment where desired, terrazzo floors have these advantages: (1) colorful beauty, (2) flexible, made-to-order designs, (3) the permanence and durability of concrete, (4) economy and ease of installation and maintenance.

On the following three pages are illustrations of typical fine terrazzo floors and twenty-four sample plates of fine terrazzo made with Atlas White in combination with various marbles. Some of these samples have a pure white matrix of uncolored cement for background. In others the matrix has been colored to blend with the marble coloring. Samples are actual size and the colors are as true as mechanical reproduction makes possible. They can be safely used in specifying terrazzo colors and marbles.

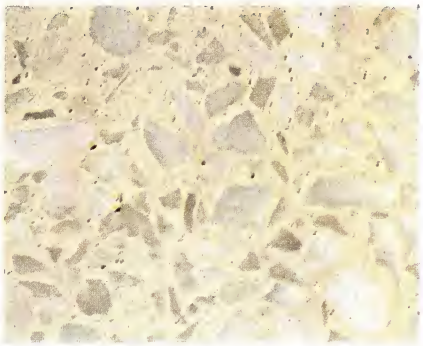
Atlas White portland cement was used in the beautiful terrazzo floors of the Texas State Capital. Views here are of the central passage and "seal of the nations." C. H. Page of Austin was architect. Bubi Jessen, Austin, prepared sketches and designs. Art Mosaic & Tile Co., Toledo, and J. B. Martina Mosaic Company, Denver, were the terrazzo contractors jointly.

FOR OTHER INSTALLATIONS SEE FOURTH PAGE

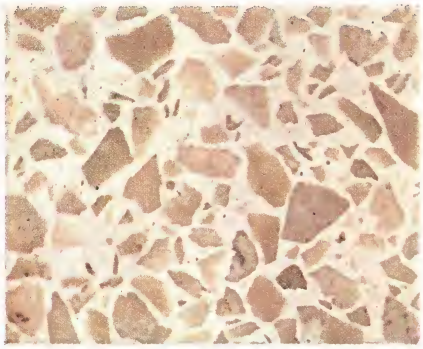
FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT

FOR 24 COLOR SPECIMENS OF FINE TERRAZZO, SEE NEXT TWO PAGES

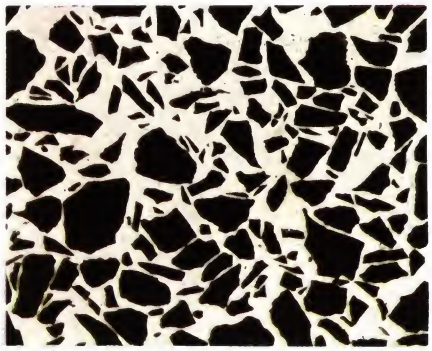
FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT



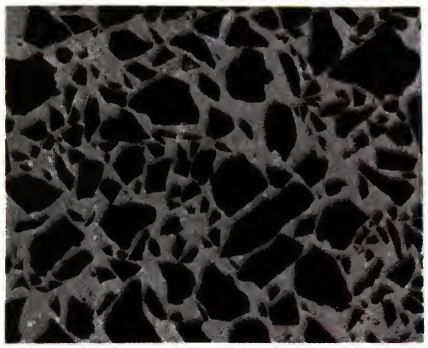
1 *Domestic White marble (No. 1 and No. 2 chips) with white portland cement.*



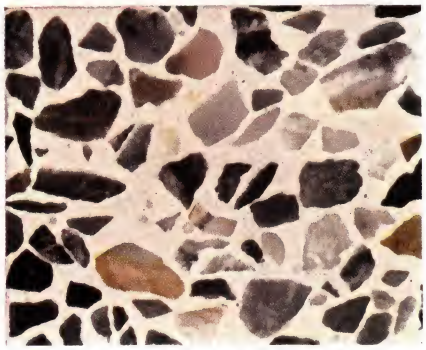
2 *Botticino marble (No. 1 and No. 2 chips) with white portland cement.*



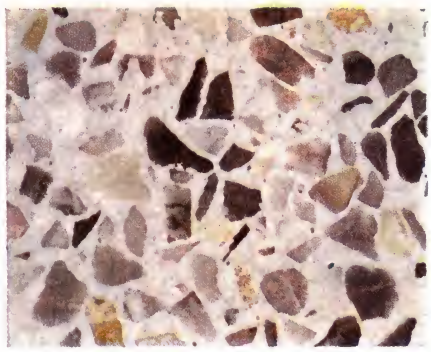
3 *Belgian Black marble (No. 1 and No. 2 chips) with white portland cement.*



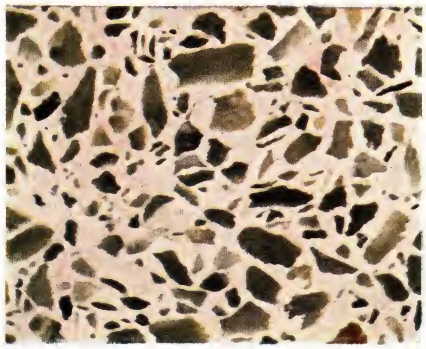
4 *Belgian Black marble (No. 1 and No. 2 chips) with white portland cement and black pigment.*



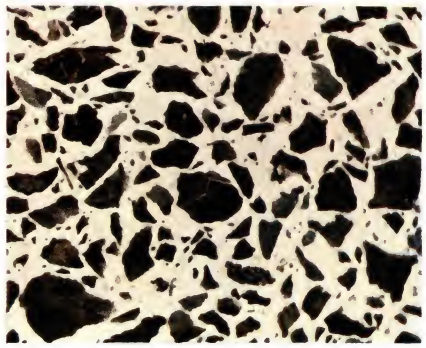
5 *Blue Turquin marble (No. 1 and No. 2 chips) with white portland cement.*



6 *Blue Turquin marble (No. 1 and No. 2 chips) with white portland cement and blue pigment.*



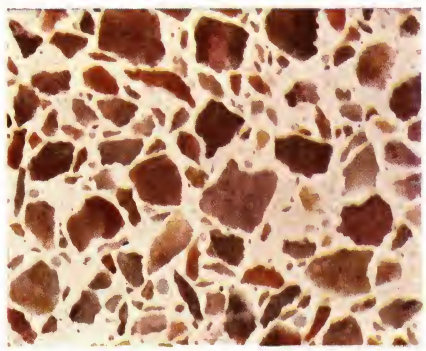
7 *Royal Green marble (No. 1 and No. 2 chips) with white portland cement.*



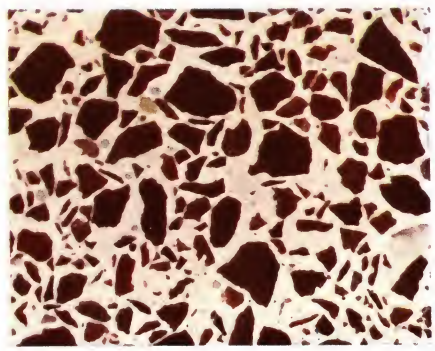
8 *Cardiff Green marble (No. 1 and No. 2 chips) with white portland cement.*

9 *Yellow Verona marble (No. 1 and No. 2 chips) with white portland cement.*

10 *Yellow Verona marble (No. 1 and No. 2 chips) with white portland cement and yellow pigment.*



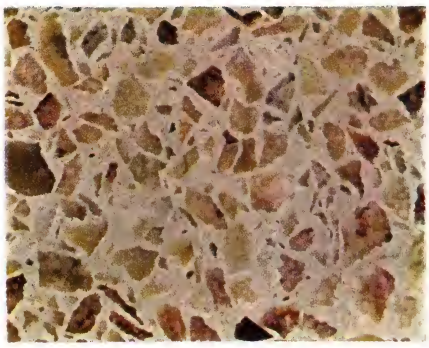
11 *Pink Tennessee marble (No. 1 and No. 2 chips) with white portland cement.*



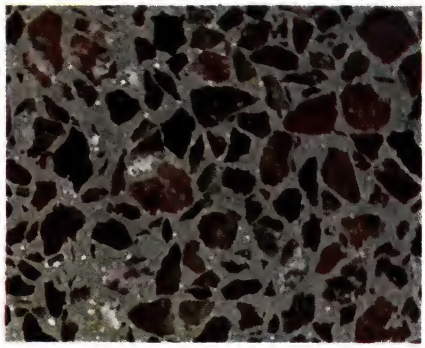
12 *Turkish Red marble (No. 1 and No. 2 chips) with white portland cement.*

THESE PLATES ARE ACTUAL SIZE, TRUE COLOR REPRODUCTIONS OF FINE TERRAZZO SPECIMENS

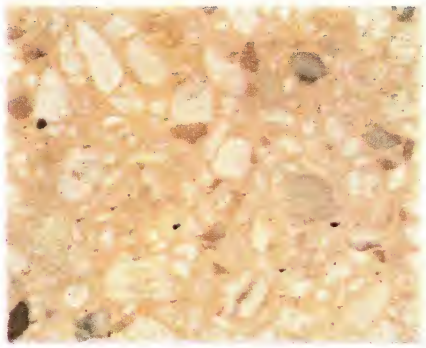
FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT



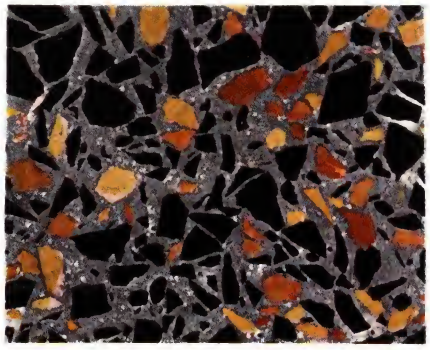
13 *Verdolite marble (No. 1 and No. 2 chips) with white portland cement and green pigment.*



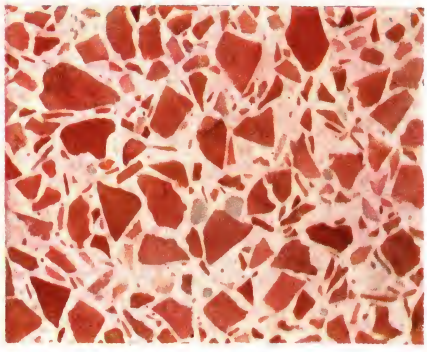
14 *Red Levanto marble (No. 1 and No. 2 chips) with white portland cement and green and black pigments.*



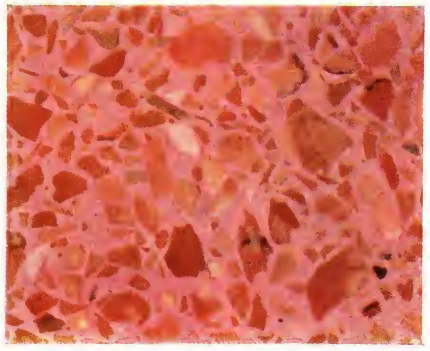
15 *Travertine marble (No. 1 and No. 2 chips) with white portland cement and yellow pigment.*



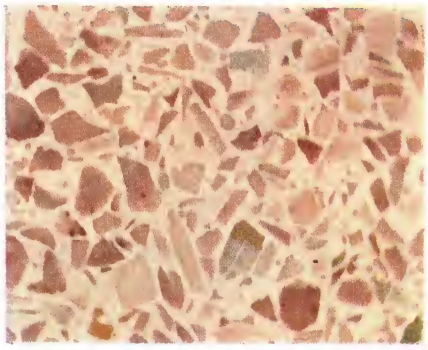
16 *Belgian Black marble and Red Verona marble (No. 1 and No. 2 chips of both) with white portland cement and black pigment.*



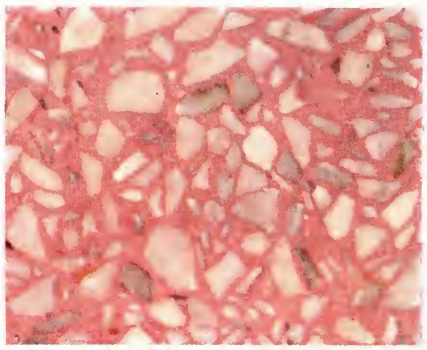
17 *Red Rosa marble (No. 1 and No. 2 chips) with white portland cement.*



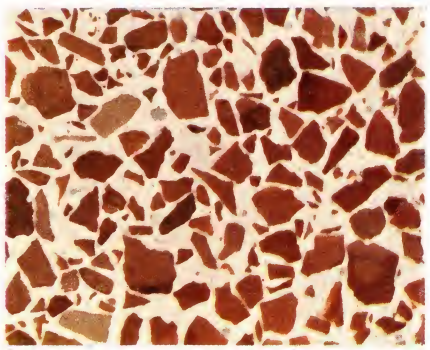
18 *Red Rosa marble (No. 1 and No. 2 chips) with white portland cement and red pigment.*



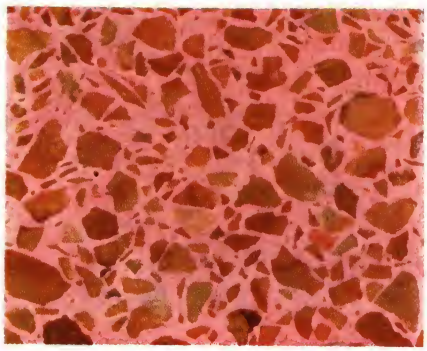
19 *Coral Pink marble (No. 1 and No. 2 chips) with white portland cement.*



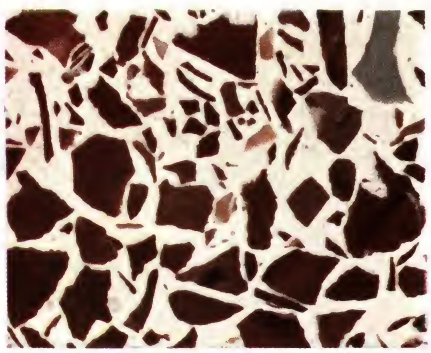
20 *Coral Pink marble (No. 1 and No. 2 chips) with white portland cement and red pigment.*



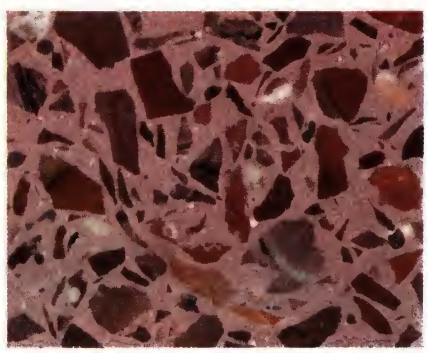
21 *Red Verona marble (No. 1 and No. 2 chips) with white portland cement.*



22 *Red Verona marble (No. 1 and No. 2 chips) with white portland cement and red pigment.*



23 *Red Champlain marble (No. 1 and No. 2 chips) with white portland cement.*



24 *Red Champlain marble (No. 1 and No. 2 chips) with white portland cement and red and black pigments.*

FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT

The walls, alter, columns and floors in The Oratory of St. Thomas More, Pilot Chapel, Boston, all are of fine terrazzo made with Atlas White cement. Architect, Richard Shaw; Terrazzo contractor, De Paoli Mosaic Company, both of Boston.

Terrazzo floor made with Atlas White portland cement in the Whitney Museum of American Art, New York. Designed by Bruce Buttfield, Inc., New York, decorator; United States Mosaic & Terrazzo Corp., Brooklyn, terrazzo contractor.

Garfield Park Administration Bldg., Chicago. Michaelsen & Rognstad, architects; American Mosaic & Terrazzo Co., terrazzo contractor, both of Chicago.

FOR 24 COLOR SPECIMENS OF FINE TERRAZZO, SEE PRECEDING PAGES

THE STRUCTURAL SLATE COMPANY

PEN ARGYL, PENNSYLVANIA

BRANCH OFFICES

ATLANTA, GA., 213 Red Rock Building
BOSTON, MASS., 43 Prospect Street, Somerville, Mass.
BIRMINGHAM, ALA., Bankhead Hotel
BUFFALO, N. Y., 116 Hamilton Boulevard—Kenmore
CHICAGO, ILL., 737 North Michigan Avenue
CINCINNATI, OHIO, 3629 Idlewild Avenue
DALLAS, TEX., 3012 Douglas Avenue
DETROIT, MICH., 111 Gladstone
KANSAS CITY, MO., 1730 Grand Avenue
MINNEAPOLIS, MINN., 1822 Jefferson Street, N. E.
NEW YORK, N. Y., 110 East 42nd Street, Room 701
PHILADELPHIA, PA., 244 North 10th Street
PITTSBURGH, PA., Room 207 Investment Building, Fourth Avenue
ST. LOUIS, MO., 1617 Lafayette Avenue
WASHINGTON, D. C., 327 Bond Building

The natural characteristics of slate quarried in Lehigh and Northampton Counties, Pennsylvania, make it particularly adaptable to a wide variety of uses in building construction and for commercial and scientific purposes.

In order to develop the most efficient standards of production and installation the majority of quarries in this slate district co-operate through one organization—THE STRUCTURAL SLATE COMPANY.

Equipment and Production

The member companies have thus been enabled to modernize mills and equipment and to co-ordinate in producing slate for all types of installations either to the standards adopted or to meet special requirements. This also makes it possible to maintain a stock of standard sizes ready for prompt shipment.

Inspection and "Pyramid" Brand Trade-Mark

All slate produced is thoroughly inspected before and after working and given the name "Pyramid." This trade-mark is registered and can be relied upon as indicative of the best that can be produced through careful methods of quarrying and experienced workmanship.

Specifications need only call for "Pyramid" brand structural slate to insure unusual excellence of product and service.

Service Department and Additional Data

The Company has a complete Service Department containing specialists in the quarrying and utilization of slate who will be glad to co-operate with architects and engineers in the study of particular problems.

The Company has also published a series of three volumes on all phases of the use and installations of slate as well as recommended standards. These may be obtained by addressing the Company.

CHARACTERISTICS, GRADING, SURFACES AND FINISHES

Structural Characteristics

Among the chief characteristics of structural slate from the Pennsylvania quarries are its fine, even grain, its uniform color, and its cleavage or fissility, which allows it to be split into slabs of practically any thickness.

The results of tests show that slate is one of the least absorptive of Nature's products, having a mean absorption of only 174/1000 of 1% when immersed in water for 24 hours.

Slate is extremely tough and elastic, as manifested by its resistance to strain, shock, blows and the effect of settlement. Moreover, it will not contract or expand.

Further data in connection with the natural formation and quarrying of slate may be secured from Bulletin 586 of the U. S. Geological Survey.

Grading

Structural slate is produced in one quality only but is divided into two natural gradings known as "Clear Stock" and "Ribbon Stock."

About 80% of the natural slate has ribbon veinings which in no way affect its impermeability or strength. Ribbon stock is standard for structural and sanitary installations and will be furnished for such purposes unless clear stock is specified.

Color

The slate produced in the Pennsylvania district is the familiar "slate grey" color.

Finishes

Planed Surface—The marks of the planing machine are faintly indicated on this surface which is used on the under side of stair treads and wherever uniformity of finish is not essential.

Standard Sand Rubbed Finish—The result of rubbing the planed surface with sand and water on large metal disks. This finish is a smooth even surface having the faintest grain or stipple. Standard unless otherwise specified for toilet room partitions, lavatory stalls, urinals, etc.

Honed Finish—Much smoother than sand rubbed this is the nearest approach to actual polish which can be given slate. It is not suitable for surfaces subject to constant abrasion but is desirable on vertically erected slate where the extra expense of about ten cents per square foot is justified.

SLATE FOR EVERY BUILDING PURPOSE

Formed by Nature, this strong, tough rock combines strength, non-absorption, non-contraction, non-expansion and endurance with economy, efficiency and attractiveness of appearance. This combination of values is responsible for the increasing use of slate for a wide range of appropriate effects in interior and exterior utilization.

Toilet and shower room partitions and wainscoting, floors, treads, base, sills, spandrels, coping, table tops, etc., are but a few of the many uses popular for modern construction.

Struco Slate

Struco Slate is natural slate rock finished with a special nitrocellulose lacquer which gives the hardest and most durable surface of any finishing material. This lacquer which was adopted only after years of research, is made up of special materials which now constitute the standard formula for Struco.

The lacquer finish is chemically inert, will not deteriorate with age and with normal care will retain its beauty indefinitely.

A special chapter, printed in full color illustrating various types of installations in Struco will be gladly sent on request.

Slate for Roofs, Floors and Walks

For years this Company has furnished the finest grade of slate for structural purposes. Now the Company is able to offer certified, inspected and labeled roofing slate and carefully selected slate in a variety of colors for floors, walks and terraces.

Every shipment of roofing slate is protected by the blue and yellow "Penn-Mont" label which is not only a mark of recognition but an absolute guarantee of fine quality and superior workmanship.

There are offered two types of floors, the "Penn-Mont" Pocono and the "Penn-Mont" Shadowcleft. The latter is an irregular design and provides an artistic informal installation for exterior or interior use. The Pocono is a random rectangular floor embodying dignity and good taste and represents a popular choice for beauty and durability.

Chapters—covering diversified uses of Structural Slate, sent on request

ESTABLISHED
1859

VERMONT STRUCTURAL SLATE CO.

MAIN OFFICE
FAIR HAVEN, VERMONT
NEW YORK SALES AND ARCHITECTURAL OFFICE: 103 PARK AVENUE—TELEPHONE, LEXINGTON 2-4036
OFFICES IN OTHER PRINCIPAL CITIES

Capacity of Manufacturing Properties

Roofing Slate—Eight quarries producing all colors and texture with production of 4,000 squares per month.

Flagstones—Two carloads per day.

Structural Slate—Three mills with capacity of 25,000 square feet per month.

Flooring—Mills and special equipment producing 1,500 surface feet per day.

Products

Vermont Unfading Green Structural Slate

Vermont Unfading Mottled Green and Purple Structural Slate

Vermont Unfading Purple Structural Slate

Garden Flagging or Stepping Stones

Roofing Slates all colors

STRUCTURAL SLATE

Description

Vermont structural slate is the name applied to structural slates quarried in or near Fair Haven, Vermont, and quarried in blocks ranging from 4x2 to 8x6 ft. in various thicknesses.

The process of manufacture is to horizontally split the quarried blocks to a suitable thickness and to vertically cut to the approximate sizes required. The slabs are then passed through planers; after which operation they are ready to be reduced to exact dimensions on rubbing beds or through the use of air tools and other special machinery.

Vermont structural slate is a hard, dense rock formed by metamorphic action from clavey shale. It is exceedingly strong, hard and perfectly non-absorbent and does not chip or spall easily. It stands foremost among the natural stones used in architectural and engineering work on account of its strength and durability. Few possess so fine and firm a texture or so remarkable a tranverse resistance. Vermont structural slate is not affected by dilute mineral acids, and the permanency of color in combination with the lasting qualities of the rock make it desirable in many cases where for esthetic reasons black slate should not be used.

Vermont structural slate possesses all the superior qualities of the highest grades of slate and in addition to them the charm and permanency of attractive color.

Color

The colors are distinct and permanent, ranging from a light green to a dark purplish brown. The most popular colors are the different shades of unfading green, unfading mottled green and purple, and unfading purple.

Finishes

The standard finish for Vermont structural slate is the regular and rubbed finish. This method of finishing reduces the surfaces finished to perfectly true, smooth surfaces. The arrises, where desired, are remarkable for their perfectly sharp and true lines. A handhoned finish furnished when required.

Sizes

The approximate maximum limit of surface size in which Vermont structural slate can be produced is 6 ft. wide by 8 ft. long. Greater lengths, however, can be furnished in lesser widths. The limit in width, for stair platforms, partitions, etc., is 6 ft. 3 in.

Uses

Great quantities of Vermont structural slate are furnished for water closet enclosures, shower bath enclosures, urinal stalls, etc.; for floors, either in large slabs, random rectangular or other shapes; for wall base, wainscoting, plinths, thresholds, floor borders, etc.; for stair treads, strings and platforms; for door and window sills; for roofing and other structural purposes. Also used extensively for electrical apparatus.

Prices

Prices, samples, etc., will be furnished upon request.

Our architectural and service department is thoroughly competent and qualified to assist architects in the preparation of drawings and specifications. We welcome requests for information relative to the use of our product.

Approved by the Investigating Committee of Architects

VICKERY STONE COMPANY

Producers of Vickstone Natural Clept Flagging

935 South 53d Street, PHILADELPHIA, PA.

REPRESENTATIVES

ATLANTA, GA., Harry E. Lindley, Mortgage Guarantee Building
BOSTON, MASS., F. R. Hersey, 31 Channing St., Wollaston, Mass.
DETROIT, MICH., C. R. McClellan, 15330 Archdale St.
MINNEAPOLIS, MINN., Rubble Stone Co., 3611 W. Lake St.
ST. LOUIS, MO., Rock Hill Precast Concrete Corp., 1200 No. Rock Hill Rd.
CLEVELAND, OHIO, The Interior Marble & Tile Co., 4404 Euclid Ave.
NEW ORLEANS, LA., C. A. King, Masonic Temple Building
NEW YORK, N. Y., The Abbey Co., 101 Park Ave.
PITTSBURGH, PA., S. A. White, 4609 Bayard St.
ROCHESTER, N. Y., American Clay & Cement Corp., 1175 E. Main St.
WASHINGTON, D. C., L. Perna & Son, 827 14th St., N.W.
INDIANAPOLIS, IND., Edw. F. Dux Stone Co., 916 E. Michigan St.

Description

"Vickstone" is an exceedingly hard, strong, durable, silicious stone, which is found in natural layers, or ledges, varying in thickness from ½ to 4 in. The uniform, fine-grained quartz particles of this stone are closely and permanently cemented together, making the stone practically non-absorbent and highly resistant to wear.

Color Range

The natural basic colors of *"Vickstone"* flagging are Blue, Buff, Grey and Purple. These colors are soft and warm-toned — not flashy — and blend harmoniously with each other and with architectural and natural surroundings. In addition to these basic colors, there are many "surface" variations, such as Rusties, Gunmetals, Rustic-browns, etc., mostly found on the faces of stone 1 in. or less in thickness.

Texture

The natural cleft faces of *"Vickstone"* flagging compare with a smoothly "split" surface, there being just enough irregularity to give the stone a charmingly informal texture and assure a positive non-slip walking surface, dry or wet.

Adaptability

"Vickstone" flagging is a practical, economical and architecturally beautiful material for walks, curbs, stepping stones, step treads, risers, platforms, copings, interior and exterior floors, terrace paving, door and window sills, chimney caps, etc.

Reference Installations

Fordham University, New York, N. Y.
Franklin Park, Washington, D. C.
Firestone Estate, Akron, Ohio
Hunter College, New York, N. Y.
Stranahan Estate, Toledo, Ohio
Kennedy Residence, Ann Arbor, Mich.
Rawlins Park, Washington, D. C.
Reigel Estate, Wilmington, Del.

Other "Vickstone" Products

Granite—Grey, Pink, Black.
Sandstone—Buff, Grey, Variegated.
Bluestone—Penn. and Ohio.
Greenstone—Genuine natural color.
Limestone—Buff, Grey, Variegated.

Sizes

Rectangular units run from 2 to 16 sq. ft. in area; average 5 sq. ft. Irregular units average 2 sq. ft. Larger rectangular units are obtainable, but more costly. Treads can be furnished in one piece up to 6 ft. long. Copings, borders, etc., should be specified in ranrom lengths, 2 ft. 6 in. to 4 ft.

Thickness

Where flagging is to be laid directly on earth and for treads, copings, exposed borders, etc., stone should be 1½ or 2 in. thick. If laid on concrete base, 1 in. average thickness is recommended. Being a natural cleft material an allowance of ¼ in. over or under specified thickness must be allowed.

Finish of Edges

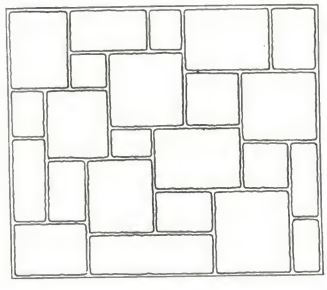
Exposed edges of treads, copings, borders, etc., should be specified as "snapped," meaning broken straight and square without tool marks; "quarry-cut" meaning roughly chisel dressed; "axed" meaning finely dressed. Snapped is least expensive and more popular, as an edge without tool marks is more in keeping with the informal natural cleft surface of the flagging.

General Information

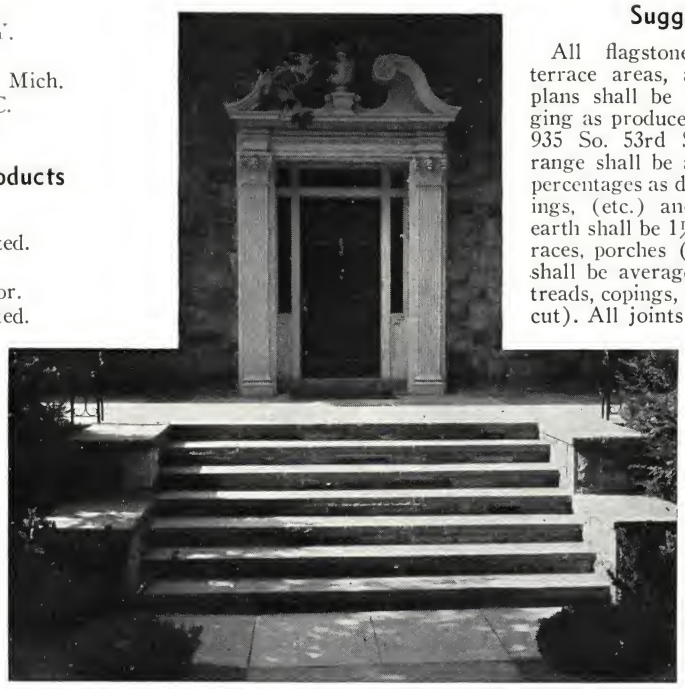
"Vickstone" flagging is produced in 20 quarries located along the famous Lackawanna Trail in Susquehanna County, Pa., the district long recognized as producing the soundest, smoothest, finest grain, widest color range of any flagging available. Facilities are such that prompt shipment by freight or truck can be guaranteed, and an efficient corps of experienced draftsmen and cutters assures expert workmanship on "cut" orders. Samples and estimates will be promptly furnished on request.

Suggested Specifications

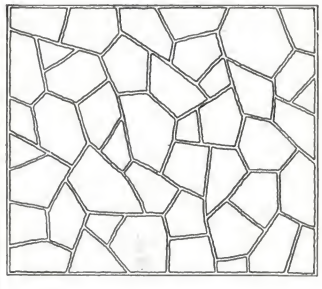
All flagstone for walks, steps, copings, terrace areas, and elsewhere as indicated on plans shall be *"Vickstone"* natural cleft flagging as produced by VICKERY STONE COMPANY, 935 So. 53rd Street, Philadelphia, Pa. Color range shall be as per approved samples and in percentages as desired by architect. All steps copings, (etc.) and paved areas laid directly on earth shall be 1½ in. thick (2 in.); fields of terraces, porches (etc.), laid on concrete sub-base, shall be average 1 in. thick. Exposed edges of treads, copings, (etc.) shall be snapped, (quarry-cut). All joints shall average ¾ in. in width.



Random Rectangular Paving Design



Vickstone Treads, Risers, Coping and Paving



Random Irregular Paving Design

LIBBEY-OWENS-FORD GLASS COMPANY

TOLEDO, OHIO

VITROLITE

COLORFUL STRUCTURAL GLASS

FOR COMPLETE DESCRIPTION AND DETAILS, SEE FILE INDEX

Vitrolite is an opaque structural glass, fused at high temperature, with a tensile strength and resistance to wear greater than that of marble. The surface of Vitrolite has a high luster.

It will not warp, swell or craze, is non-absorbent, highly resistant to staining and to burns from cigarettes or cigars and is easily cleaned.

HOW USED

Architects recognize colorful Vitrolite as a means to architectural character and modern decorative effects. It meets the most exacting requirements of service and decorative beauty both in new construction and in modernizing. Vitrolite is today in wide use for store fronts; entire building fronts; lobbies in theatres and public buildings; corridors, wash rooms, shower baths and toilet rooms; for walls and ceilings in laboratories, dairies, bakeries, barber shops, refreshment parlors, restaurants, meat markets and stores of all types. In homes, Vitrolite is becoming increasingly popular for wainscoting, also complete walls in smart kitchens and bathrooms. For counters, bars, soda fountains, table tops, etc. Vitrolite offers obvious advantages.

For complete details refer to the L.O.F. Catalog, see File Index

THE NURRE COMPANIES, INC.

HOME OFFICE AND PLANTS 1 AND 2
BLOOMINGTON, IND.

BRANCH PLANTS

DUBUQUE, IOWA ST. LOUIS, MO. KANSAS CITY, MO. MEMPHIS, TENN. EGG HARBOR CITY, N. J.

REPRESENTATIVES IN ALL LARGE CITIES

Description

NURALITE
BEAUTY WITH PERMANENCE

Nuralite is a highly polished, hard surfaced vitreous structural glass made from rock ingredients and fused under tremendous heat, being rolled flat while in a plastic state. This insures an absolutely non-porous material, guarding entirely against the absorption of odors and moisture.

Nureplate is a mechanically ground and polished surface glass. Available in variegated light, medium, dark mahogany, blue green, onyx green, gray, plain black and white.

It possesses unusual beauty; great tensile strength, does not discolor, deteriorate, craze, or fade, keeping its highly polished surfaces indefinitely.

Variations in climatic conditions have no effect on Nuralite, neither do chemical compounds or gases in the atmosphere affect its freshness, color, or sheen. The surface of this material will not stain and is not affected by acids (except hydrofluoric acid which is used to etch glass). It is absolutely sanitary. Its surface will last indefinitely, and accordingly, it is never necessary to refinish Nuralite. Owing to the highly polished surface, a damp cloth will quickly remove all grit and dirt and restore its original lustre. Its original cost, therefore, is the only cost. For lasting permanence with beauty and low cost, choose Nuralite.

Textures and Colors—Nuralite is available in various surface textures and all sizes. THE NURRE COMPANIES, INC., do not encourage the use of Nuralite in large panels, except in the heavier thicknesses.

One of the prominent advantages of Nuralite is the fact that it is obtainable in many plain and variegated colors. It can be secured in subdued pastel shades of variegated cream, orchid, peach, green, rose, gray and blue. In addition, solid colors are available in old ivory, pea green, olive green, blue, gray, black, and white. Every conceivable harmonious blending of colors is possible with Nuralite. By using the variegated material it is possible to effect color combinations which have never before been seen in any decorative material, and the permanence of these colors insures lasting beauty.

Nuraplate the Correct Facing for Modern Buildings of Various Types
Economy—no painting, refinishing; no wearing away from heat, rain or other atmospheric conditions. A damp cloth removes dust and grime and restores original lustre

Application

Nuralite is recommended for wainscoting, ceilings, bulkheads, table tops, window seats, shelving, and numerous other purposes. It is ideal for bulkheads and pilasters where not only beauty, but also sanitation, cleanliness and durability are prime requisites. This material can be installed directly over old plaster in remodeling work, eliminating the usual muss incident to work of this type as well as eliminating further maintenance cost.

Plain colors are furnished in all thicknesses. Variegated material is available only in various thicknesses up to and including ¾ in.

Service

We maintain an Engineering Department at our home office and urge that you do not hesitate to make use of this department in connection with your structural glass problems. Write for copies of specifications and samples of plain or variegated Nuralite from the plant nearest you.

Nuralite in the Home
Many color schemes to match plumbing fixtures and furniture find acceptance in kitchen, bathroom and hallways

Build with Nuralite—the New Day Material
The Structural Glass that adds natural beauty, color and character to modern fronts or entire buildings

PITTSBURGH CORNING CORPORATION

Grant Building
PITTSBURGH, PA.

Carrara Structural Glass is distributed by the Pittsburgh Plate Glass Company
For list of branches and map, see Pittsburgh Plate Glass Company General Glass Catalogue in Sweets

CARRARA STRUCTURAL GLASS

Beautiful, Practical and Versatile Material for Modern Design and Decoration

The Product

Carrara Structural Glass is a material which successfully combines beauty, versatility, sanitation, permanence and reasonable cost. It is a glass whose surface is mechanically ground and polished. During manufacture, grinding wheels remove the crude, or fire finish, leaving a homogeneous, uniform structure. The surface thus exposed is then polished, by essentially the same methods as those employed in the manufacture of the finest polished plate glass. This grinding and polishing results in a smooth, mirror-like surface, accurately reflective.

Carrara brings to the architect soft color tones that are mellow, distinctive and designed to harmonize with any color scheme. (See color chips on page 5.) Carrara is strong and durable, made to withstand rigorous use both indoors and out. It will not absorb odors of any kind. It is impervious to grease, grime, moisture, chemicals, and pencil marks. It can be easily cleaned by an occasional wiping with a damp cloth. It retains its brilliant luster and perfect mirror-like reflective qualities year after year. It is easy to install. And it is adaptable to so many different kinds of treatment that it offers the architect unlimited opportunities for design.

Structure

Uniform, homogeneous, closeknit, vitrified.

Decoration

Carrara can be beautifully decorated to suit individual tastes. It can be shaded or fluted. It can be sand-blasted with any design desired, bringing the pattern out either in shallow or deep relief. These designs may be further enriched by the application of gold, silver or colors.

Laminated Carrara

Carrara can be laminated by heat and pressure at the factory, assuring a permanent joint, and this laminated Carrara is then handled and set like a single slab. The laminated slab forms the finest type of toilet partitions. By lamination, many original effects may be obtained, such as the combination of two different colors, the building up of Carrara pilasters with reveals and offsets, etc.

Installation

Carrara is easy to install. It is handled similarly to marble. To insure installations being made according to our standards, we maintain our own crews of workmen.

Carrara may be installed over any hard, firm wall surface, but *an allowance should be made for a space of* $\frac{3}{8}$ *in. behind the glass for setting.*

Carrara is installed by means of a plastic cement, which bonds permanently with the glass and the wall—yet allows for settling, shrinkage and expansion.

We provide all hardware necessary for the erection of our material, and will have the slabs drilled for any hardware or fixtures which we do not supply, such as hinges, strikes, etc., provided we are furnished their location and dimensions, so that the drilling may be done at the factory.

Suggested Specifications

This contractor is to furnish all labor, material and service necessary for properly installing all Structural Glass as indicated on the drawings.

Contractor shall verify all dimensions at building, prepare shop drawings and furnish the architect with three sets of prints for approval. Doors, equipment and all hardware not necessary for erection of Structural Glass will be furnished and installed by other contractors. Other contractors will prepare walls, furnish and set wood grounds—also wood blocks for fixtures.

All Structural Glass shall be Carrara as made by the PITTSBURG PLATE GLASS COMPANY of size and thickness indicated on the drawings. Finish of face side and all exposed edges to be polished.

The polished finish will be obtained by grinding the surface until a true plane is produced and then mechanically polishing it to a high luster. Installation will be made according to the manufacturers' recommendations and to the satisfaction of the architect. This contractor, before setting Structural Glass, shall size the rough wall with an approved type of bond coat.

Mastic cement used, shall be of a type tested and approved by the Structural Glass manufacturer.

All pieces shall be set plumb and true and with even flush joints which shall be filled with an approved type of pointing compound.

This contractor shall do all cutting and drilling of Carrara for other contractors provided they furnish him with accurate layouts so that it may be done at the factory.

At the completion of his work, this contractor shall remove all rubbish, clean the Carrara and leave it in satisfactory condition.

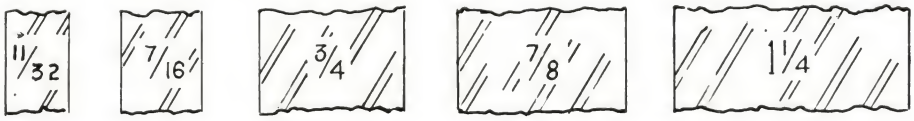
Used with Pittco Metal in Store Fronts

Carrara Structural Glass has been widely used for the construction of modern store fronts, in connection with Pittco Store Front Metal. For information and details of use with Pittco Metal, see Pittsburgh Plate Glass Store Front Catalog in Sweet's File Index.

Physical Characteristics

Qualities	Thickness	Maximum sizes	Weight	Strength	Colors	Finish
"Perfected" only	Standard colors— 11/32"— 7/16"— 3/4"—7/8"— 1 1/4" Black also available 1/4"	Largest manufactured size 72"x130" Largest recommended size for exterior use —10 sq. ft.—for use above 2nd story height 6 sq. ft.	1/4"— 3.29 lb. sq. ft. 11/32"— 4.5 lb. sq. ft. 7/16"— 5.76 lb. sq. ft. 3/4"— 9.87 lb. sq. ft. 7/8"—11.51 lb. sq. ft. 1 1/4"—16.45 lb. sq. ft.	As great or greater than materials commonly used for same purpose	Standard: Jade Ivory Gray White Black Trim: Wine Rembrandt Blue Orange and Forest Green	Mechanically ground and polished to a plate glass surface

Thickness
(Actual size)

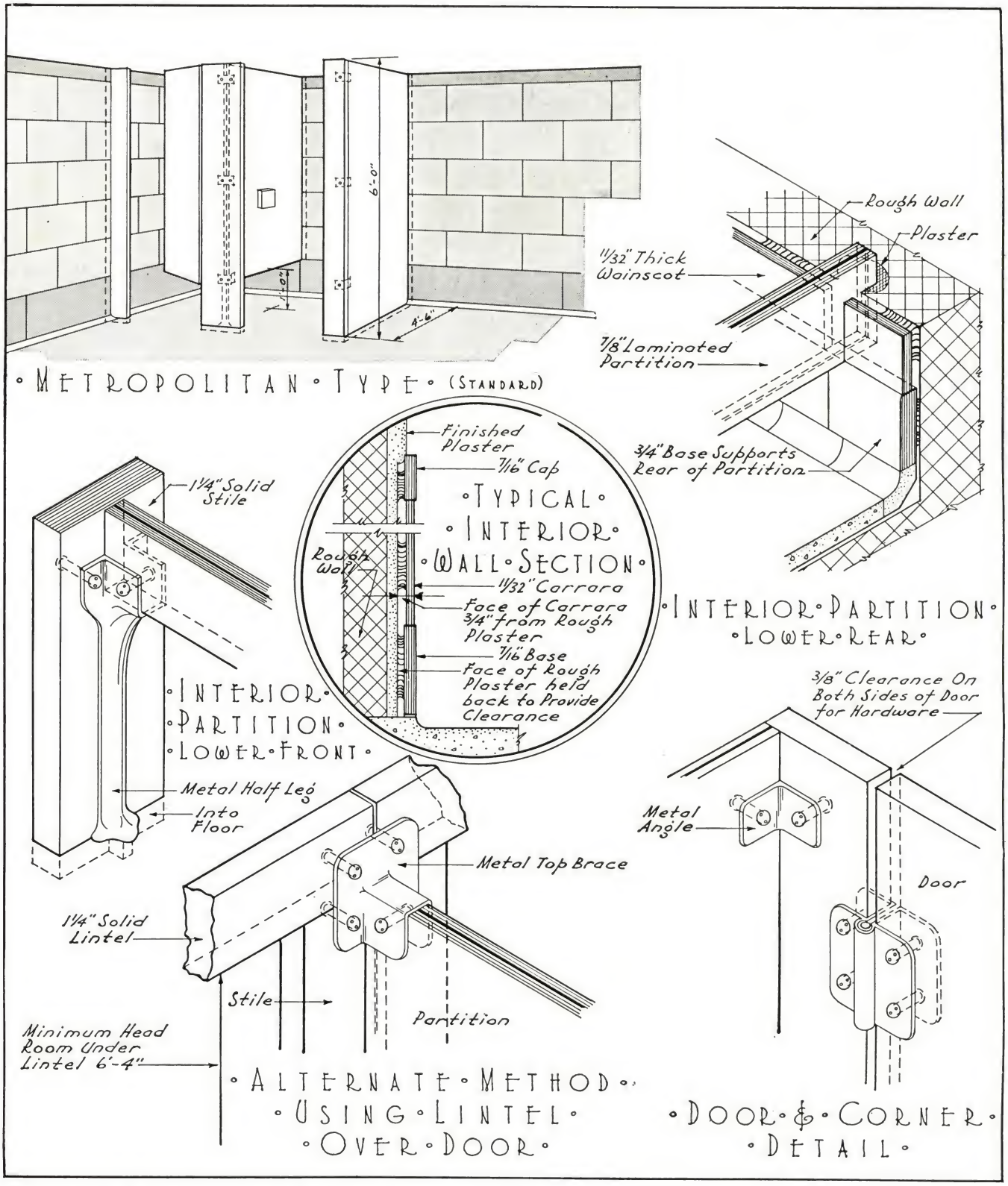


Type and Thickness of Carrara Recommended for Various Members

Ceiling	11/32 in.	Partitions	7/8 in.
Wainscot, Ashlar	11/32 in.	Door and Window Trim	7/8 in.
*Cap	3/4 or 7/16 in.	Deal Plates	7/8 in.
*Base	3/4 or 7/16 in.	Counter Tops	1 1/4 in.
Store Fronts	7/16 in.	Lintel	1 1/4 in.
*Wainscot, Panel	3/4 or 7/16 in.	Stiles	1 1/4 in.
Bulkheads	7/16 in.	Shower Seat	1 1/4 in.

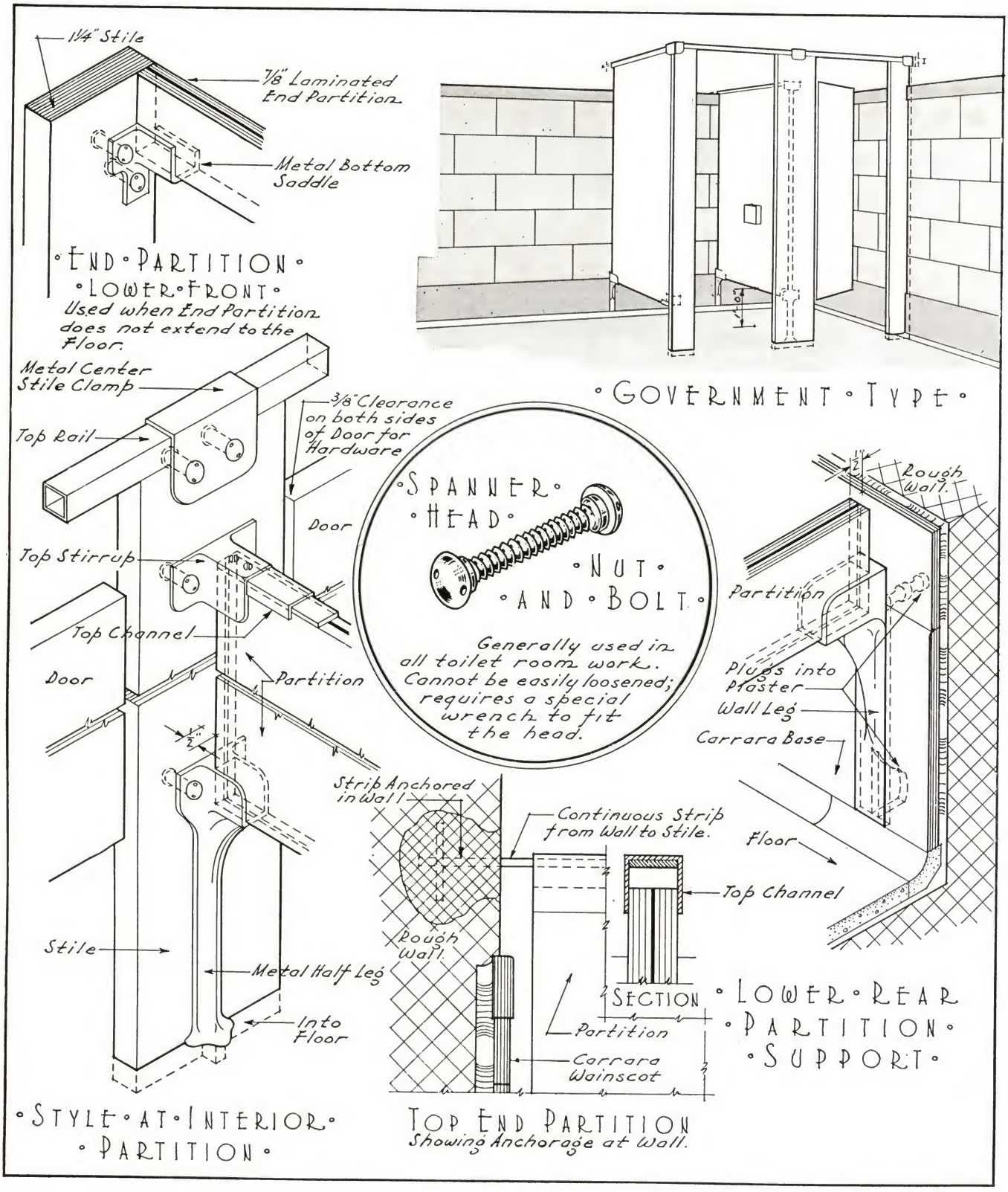
*Where two thicknesses are mentioned, size of unit is determining factor.

Toilet Room Compartment Details



The usual or Metropolitan type of toilet compartment construction is illustrated at the left, though it is possible to modify it by use of a lintel as shown in the detail at the lower left corner of the page. Rigidity of construction is obtained by letting the stiles and partitions enter the floor and wall at least ¾" where they are held straight and true with a bond of Plaster-of-Paris. In addition to *ashlar* patterns, Carrara may be laid up in large slabs or other construction.

CARRARA Modern Structural Glass



PITTSBURGH CORNING CORPORATION

Five Standard Colors of CARRARA Structural Glass

Black

White

Jade

Gray

Ivory

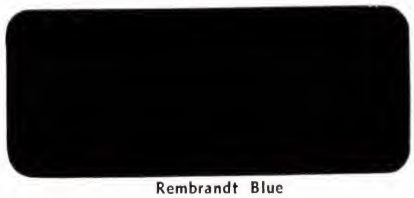
Standard Colors Made in Thicknesses of $11/32$", $7/16$", $3/4$", $7/8$", $1\frac{1}{4}$". Black Also Available $1/4$"

Four Trim Colors of CARRARA Structural Glass

Wine

Orange

Trim Colors Made in $7/16$" Thickness Only



Rembrandt Blue

Forest Green

A Few of the Architects Who Have Specified Carrara Toilet Rooms in Two or More Buildings

Architect	Building	Architect	Building
Cass Gilbert	Woolworth Bldg.	Albert Kahn, Inc.	S. S. Kresge Administration Bldg.
Cass Gilbert	Union Central Life Bldg.	J. E. R. Carpenter	Lincoln Bldg.
Cass Gilbert	Detroit Public Library	J. E. R. Carpenter	515 Madison Avenue
Cass Gilbert	Prudential Bldg.	McKim, Mead & White	University Club, N. Y. C.
Cass Gilbert	New York Life Bldg.	McKim, Mead & White	P.R.R. Station, Newark
Cass Gilbert	U. S. Chamber of Commerce	Graham, Anderson, Probst & White	P.R.R. Station, Philadelphia
Cass Gilbert	U. S. Court House, N. Y. C.	Graham, Anderson, Probst & White	Marshall Field Bldg.
Cass Gilbert	U. S. Supreme Court	Trowbridge & Livingston	J. P. Morgan & Co. Bldg.
Cass Gilbert	U. S. Legation Bldg.	Trowbridge & Livingston E. P. Mellon	Mellon Bank, Pittsburgh
John Russell Pope	Roosevelt Memorial	Sugarman & Berger	Mercantile Bldg.
John Russell Pope	U. S. Archives Bldg.	Sugarman & Berger	The New Yorker
Holabird & Root	Board of Trade	Cross & Cross	N. Y. Trust Company
Holabird & Root	Palmer House	Cross & Cross	Stone & Webster Bldg.
Warren & Wetmore	Ambassador Hotel Annex	Thomas M. James Co.	75 Federal Street, Boston
Warren & Wetmore	Grand Central Terminal	Thomas M. James Co.	Federal Land Bank
Warren & Wetmore	N. Y. Central Bldg.	War Department	Hospital
Warren & Wetmore	Commodore Hotel	War Department	Hospital
York & Sawyer	First National Bank	Felheimer & Wagner	Union Station, Cincinnati
York & Sawyer	Bowery Bank	Felheimer & Wagner	Erie Passenger Station
York & Sawyer	Salmon Tower	Felheimer & Wagner	N. Y. Central Station, Buffalo
York & Sawyer	R. I. Hospital Trust Co.	W. W. Ahlschlager	State-Washington Bldg.
York & Sawyer	N. Y. Academy of Medicine	W. W. Ahlschlager	Roxy Theatre
York & Sawyer	Union League Club	John M. Howells and Raymond M. Hood	Tribune Tower
Shreve, Lamb & Harmon	500 Fifth Avenue Bldg.	Howells & Hood and Lockwood, Greene Eng., Inc.	Daily News
Shreve, Lamb & Harmon	Insurance Co. of N. America	Janssen & Cocken	Mellon Inst. of Ind. Research
Thomas W. Lamb	Albee Theatre	Janssen & Cocken	Kaufmann's Department Store
Thomas W. Lamb	Capitol Theatre		
Albert Kahn, Inc.	Cadillac Administration Bldg.		
Albert Kahn, Inc.	Fisher Garage Bldg.		
Albert Kahn, Inc.	Nurses' Home & Ford Hospital		

A Few Notable Buildings with Complete Toilet Room Installations of Carrara

Building	Architect	Building	Architect
State Office Bldg.	Gehron & Ross	Waldorf Astoria Hotel	Schultz & Weaver
Bank of Manhattan	H. Craig Severance, Inc. Yasuo Matsui Associate	Penn Mutual Life Ins. Bldg.	John T. Windrim
Butterick Bldg.	Russell G. Cory	Grant Bldg.	H. Hornbostel, Eric Fisher Wood & Co., Associate
Chanin Tower	Sloan & Robertson	Rockefeller Center, New York	Reinhard & Hofmeister, Corbett, Harrison & McMurray, Hood & Foulhioux
Squibb Bldg.	Buchman & Kahn		
Columbia University Library	James Gamble Rogers	U. S. Department of Justice	Zantzinger & Borie
New York Times Annex	Ely Jacques Kahn		
Union Club	Delano & Aldrich		

Many U. S. Government buildings not mentioned above also include Carrara toilet room installations.

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https://archive.org/details/buildingtechnologyheritagelibrary

CHICAGO ART MARBLE COMPANY

Manufacturers and Contractors of Pre-cast Products

TELEPHONE
Lafayette 1201-2

OFFICE AND PLANT
2883-87 Hillock Ave., CHICAGO, ILL.

ESTABLISHED 1890

"ORIGINATORS OF ART MARBLE"

Products

ART MARBLE and NON-SLIP ART MARBLE.
SWIM POOL WALL SLABS and GUTTERS.
CEMENT-SLAYTE SLABS and TILES.
COLORED CEMENT, MARBLE DUST.
PRE-CAST CONCRETE PRODUCTS.
ROAD MARKERS, STRIPS, SPECIALTIES.

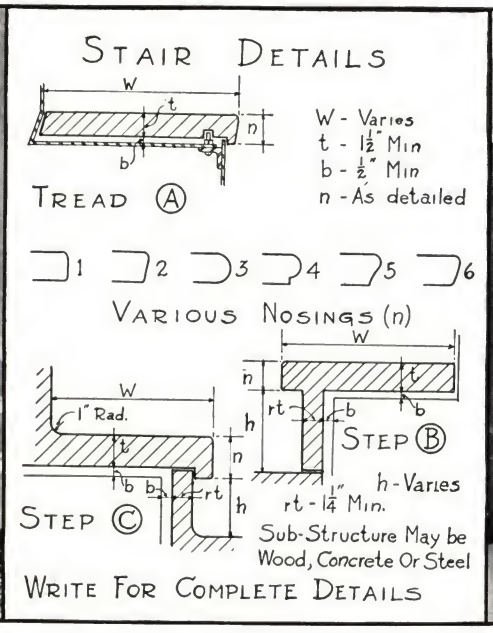
"CAMCO"
TRADE-MARK

Where Used

In all types of buildings for Floors, Steps, Treads, Toilet and Shower Partitions, Base, Wainscot, Window Stools, Ramps, Counters, Drinking Fountains, Decorative Sculpture, Benches, Thresholds, Fireplaces, Radiator Tops, Store Fronts and other uses.

Definition—"Art Marble" as manufactured by CHICAGO ART MARBLE COMPANY, represents the highest quality pre-cast product, made of marble chips or other aggregates and Portland cement, scientifically manufactured, with proper equipment, by experienced mechanics.

Albert Pick & Co., Chicago, Ill.



Field Building, Chicago, Ill.

Stair Treads "A" and Steps "B" or "C" available in any widths, nosing profile, practicable length for use on wood, steel or concrete sub-structure. Also made self-supporting for any special conditions. Suggestions available.

Stair treads are finished in plain or non-slip Art Marble. Non-slip Art Marble is recommended for most conditions. Norton Co. Licensee, to use Alundum Aggregate in pre-cast products.

Other "Camco" Art Marble Products

Base—Straight or with cove. Any practicable height, length, thickness or profile.
Wainscot—All sizes for dadoes, corridors, vestibules, toilets and showers.
Partitions—1¼ in. thick min. End mullions cast integral. For toilets and showers.
Shower Receptors—All sizes; one-piece construction with or without curbings.
Ramps—Special ribbed tile for steep slopes. Adapted to railroads and schools.
Cement Slayte—A colored flagging in all sizes and colors for indoor and outside uses.

Specify "Camco" Products manufactured by Chicago Art Marble Company

GIBBS BOARDTILE CORPORATION

615-649 North Aberdeen Street

CHICAGO, ILL.

The Product

Gibbs Tile Products are improvements. They should not be considered as a substitute for ceramic materials, but a definite tiling material or board. New and modern; intended for interior decoration of walls and not for flooring.

It is synthetic; made by a patented process under heavy pressure, and finished by a secret formula; giving a fine textured, highly polished surface that literally wears like iron and will not chip, crack or craze (hairline cracks).

It is sanitary, waterproof, verminproof and is not affected by heat, cold, grease or steam from cooking or washing. It can be washed or wiped off as easily as a china plate. Cleansing improves its luster. It is strictly insectproof.

To its qualifications in appearance, permanence and price must be added its value in cleanliness and sanitation.

Applied to wall surfaces by a special adhesive, Gibbs Tile products are supplied in sheets of various standard sizes, with baseboards, mouldings and finishing strips to match.

Quality

For any condition that arises, whether it is price or quality, one of the Gibbs products will meet the situation. These are DeLuxe Patterns, Boardtile, Lustertile, Commercial Tile, Economy Tile. All built to standards which we are able to maintain because we compound our own formulas.

Colors—Finishes—Sizes

Almost endless are the combinations and original arrangements possible with the various standard designs and colors in Gibbs Boardtile, Lustertile, Commercial Tile and Economy Tile and accessories that are quickly available to the architect. It will be remembered that any special colors other than those listed may be had, also, at most nominal surcharge over the low costs for standard materials and colors.

Standard Colors—Pea green, light ivory, dark ivory, canary yellow, light blue, orchid, cardinal red, jade green, mist gray, tangerine, dark orchid, terra cotta, cream, beige, peach, robins egg blue, white and black.

Finishes—Standard—Solid colors can be furnished in about 75 regular colors.

Pebble Grain—Standard colors; green, gold, silver.

Tints—Green tint, Cocoa tint, Orchid tint.

Varitone—Horizontal stripes of graduated color or shades. (Sample of color sent with order will be expertly matched.)

Checkered—Alternating squares of regular colors.

Standard Sizes—1x4, 2x4, 3x4, 4x4, 4x5, 4x6, 4x7, 4x8 ft. with scoring. Also lengths to 12 ft. in unscored patterns.

(Other special size sheets scored or unscored, furnished at slight additional charge.)

DeLuxe Patterns

Marble Pattern—Breche Rose, Jaune Benou, Black and Gold.

Wood Grain Pattern—Carpathian Elm, Walnut Burl, Italian Olive Wood, Striped Walnut, Mahogany Squares.

Size—36x48 in. or in a multiple of this size 48x72 in., etc.

The world's most beautiful marbles are exactly reproduced in Gibbs DeLuxe Patterns, giving a wide range of choice in color effects. These should not be confused with ordinary commercial products. In appearance and effect Gibbs DeLuxe Marble Tile parallels the natural material. The important difference is in weight and costs—a difference heavily in favor of Gibbs Tile Board.

Wood effects in crotch and burl cutting are equally effective where these are preferred.

Superb and artistic effects are created with these exclusive materials.

Low Maintenance

Because of its glasslike, lustrous surface, Gibbs Tile Board requires practically no care. A damp cloth removes the little that can accumulate from dust or spattering. No finish surpasses it in sanitary qualities. Wholly unlike materials that require plaster, its installation is correspondingly clean.

Easily Installed

Gibbs Tile Board can be sawed, planed, nailed or glued. Any good carpenter can fit and install it—without dirt or dust. There is very little disturbance to an occupied household during installation.

Corner Strips

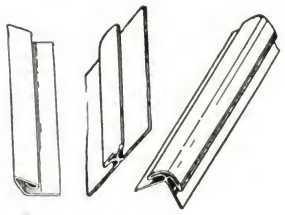


Illustration shows some of our metal incorners, outcorners and division strips which come in 4, 5, 6, 7 and 8-ft. lengths and in shades to match the colors selected or the popular chrome plated. Division strips are seldom used, for if the tile is properly cut, fitted and cemented, a close-fitting joint can be secured, making it practically impossible to see where the edges of the sheets meet.

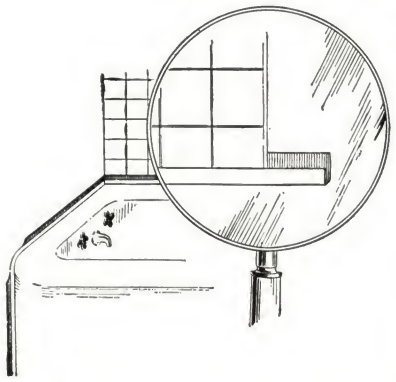
Baseboard

Baseboard is finished in a thickness of $\frac{5}{16}$ in. (three times thicker than the Tile Board sheets). Stock sizes are 4, 6 and 8-in. widths, and in lengths of 6 ft. Black baseboard, natural scored every 12 in., is carried in stock. Other sizes may be had to order at no added cost. We furnish baseboard in any standard color selected.

Mouldings

Cap or contrast top moulding is furnished scored or unscored to match the color of the Tile Board selected. Natural scoring is brown or the color of the base of the board and all stock moulding is natural scored every 6 in. If other colored score is desired it can be made. Our moulding comes in a width of 1½ in. and rabbeted to fit over the top of the tile. The corners can be coped or butted to meet the condition.

Attaching Around Bathtubs



We furnish a special chromium plated bathtub set for this purpose. This set comes in three pieces in what is known as a right bend, left bend and straight rim strip. This set is attached to the walls and protects the edges of the Tile Board where it meets the rim of the tub. It prevents an accumulation of dust or sediment, and insures an absolutely waterproof joint, and greatly facilitates an expertly made installation by any careful carpenter.

Directions for Installing

(1) Tools—Only tools required are fine-toothed saw, hack saw, plane, hammer, brace, bits, supply of 1¼-18 gauge finishing nails (oil tempered), sandpaper, special waterproof cement, and putty.

(2) Layout—Cut materials with least waste. Find lowest point of room and measure up to tile height, allowing for base. Make level mark around room wall as guide in fitting. Carefully measure and cut all openings for pipes, switches and outlets, so that plates will completely cover such openings.

(3) Preparation of Walls—Inspect walls, removing prominent high spots and fill low spots carefully.

(4) Start Attaching—Always install on a solid and smooth background like plaster, wall board, etc., starting from the inside corner (or door) of largest wall.

Metal strip should be cut ¼ in. shorter than the height of sheet. Attach outside corner strip by nails driven through flange on side of strip. Place nails about 12 in. apart then insert and attach your first sheet.

(5) Matching Tile—Keep horizontal score line exactly level to insure a straight line across wall. If it is necessary to cut the sheet, thereby reducing the size of square, edge of sheet so cut should be placed at corner of room or door frame.

(6) Butting Inside Corners—The first sheet to be attached is cut with a scored edge fitting tightly into the metal corner strip and fastened in place. Next sheet is cut and fitted so that the horizontal score line will be in a straight line, edges of both sheets being sandpapered. An extra score line is allowed on each sheet for making joint that cannot be noticed. Plane edges so that score line is same width as the others.

(7) Cementing—We furnish our No. 33, a special waterproof cement for attaching Gibbs Products to walls and ceilings, 1 gal. of which will cover 60 to 80 sq. ft. Cement should be spread with a trowel or painter's scraper knife, applying it to walls as well as the sheets of Tile Board. Also nailing to studdings or partitions insures better bonding and strengthens the walls.

Our No. 100 Cement is spread on walls only, covering 70 to 90 sq. ft. per gal.

(8) Nailing—Nails should be driven into the cross of the score line at point where sheets meet the studding. Where colored scoring is used, nails should be set flush and nailheads carefully covered with colored touch up. Studdings are usually 16 in. apart, but whenever possible space nails 12 in. Where sheets come together to insure a perfect joint, space nails not to exceed 8 in.

(9) Moulding and Chair Rail—We furnish a special moulding or chair rail to complete the trim and these are rabbeted to fit over top of the tile. Corners may be coped or butted to meet conditions. Moulding should be ordered scored, as it is attached to the walls by nails and cement. Nails should be driven into the score line, and covered with touch up.

(10) Clean Up the Job—It frequently happens after an installation that smudges of No. 33 cement will be found upon the surface. This is quite easily removed by promptly applying Bon Ami with a damp cloth or sponge. But, *do not permit the cement to harden.*

No. 100 cement may be cleaned from the surface by using naphtha or benzine promptly after installation.

MEMORANDA

-and Many other Building and Architectural Uses

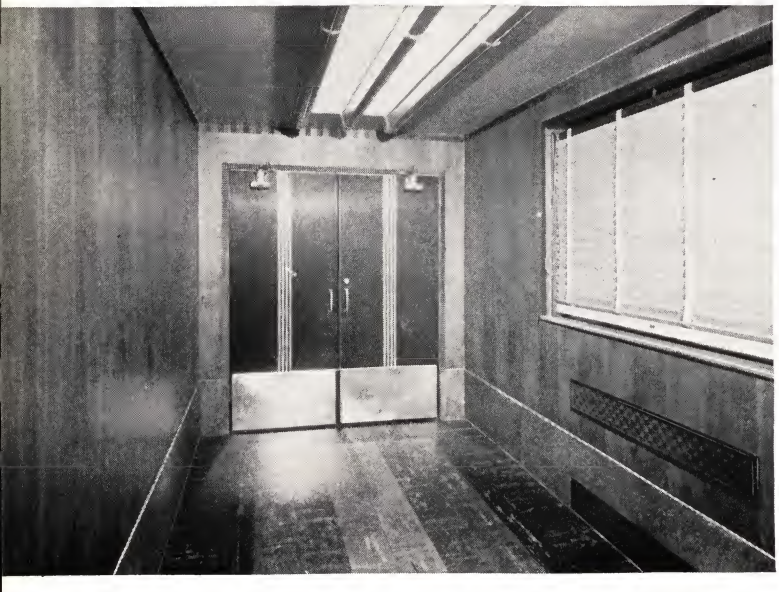
TRANSLUCENT SHATTERPOOF FORMICA

● Formica Counter Tops, Paneling and Doors in the National Trailways Bus Terminal, Chicago. Graham, Anderson, Probst & White, Architects.

● Lobby, Hollywood Restaurant, Broadway, New York. Complete Formica Walls and Ceilings. Translucent Formica in two colors for columns. Nicholas H. Weiss, Architect.

● Formica Lunch Counter in the National Trailways Bus Terminal, Chicago.

● Oil Service Station of the Shell Company with Formica bulkheads below the windows, Formica background for signs, and a clock made with Formica Inlaid Sheet as the face.



● Formica Inlaid Doors in the State Farm Insurance Building, Bloomington, Illinois. Schaeffer & Hooton, Architects.

● Formica Revolving Doors with doors and housing in blue Formica in one of the John R. Thompson Units. Installed by the International Revolving Door Company, Evansville, Indiana.

FORMICA INSULATION COMPANY

CINCINNATI, OHIO

BRANCH FACTORIES

NEW YORK, N. Y., 101 Park Avenue

CHICAGO, ILL., 111 No. Canal Street

SALES OFFICES

SALT LAKE CITY, UTAH, 204 Interurban Depot Building
BIRMINGHAM, ALA., 320 Brown-Marx Building
PITTSBURGH, PA., 405 Penn Avenue
JACKSONVILLE, FLA., 418 Park Street
NEW ORLEANS, LA., 348 Baronne Street
HAVANA, CUBA, 51 Calle Obispo
TOLEDO, OHIO, Second National Bank Building
SEATTLE, WASH., 111 Canadian National Pier
SAN FRANCISCO, CAL., 123 Kansas Street
BALTIMORE, MD., 100 W. 22nd Street
PHILADELPHIA, PA., 201 Architects Building
DETROIT, MICH., 544 Book Building
LOS ANGELES, CAL., 1438 E. 18th Street
CLEVELAND, OHIO, 523 Caxton Building
QUINCY, MASS., Granite Trust Building
HARTFORD, CONN., 647 Main Street
MIAMI, FLA., 144 N. E. 21st Street
KANSAS CITY, MO., 308 E. 17th Street
TAMPA, FLA., 805 Peninsular Telephone Building
DENVER, COLO., 960 Pearl Street
DALLAS, TEX., Santa Fe Building
ST. LOUIS, MO., 4 No. 8th Street
ROCHESTER, N. Y., 25 North Street
ATLANTA, GA., 526 Forrest Avenue, N. E.
BUTTE, MONT., 910 W. Silver Street

● Formica Mottled Wall Covering in a Barber Shop. This is sanitary, easy to keep clean and maintenance free.

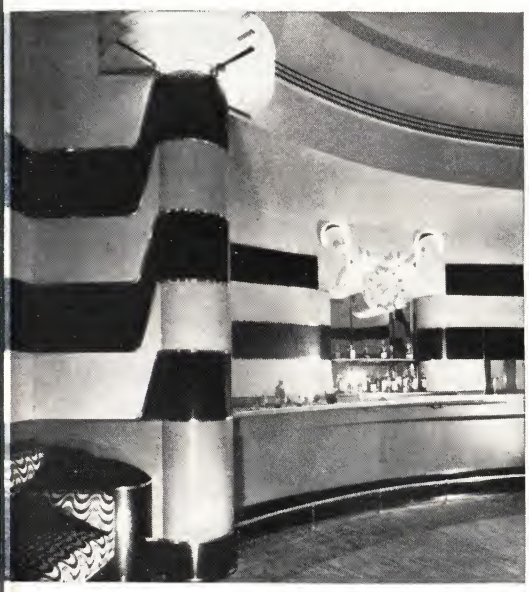
A Colorful and Lasting Finish

Formica is a finishing material for all sorts of flat areas which combines a smooth surface that is very inert chemically and therefore spot and stain proof, with hardness and wear resistance.

It is available in more than 70 colors and in satin, high gloss, and morocco surfaces. Inlays of simple designs can be made by pressing one color over another when the sheet is vulcanized together, or the inlays may be in metal of different colors.

Table and Counter Tops

Formica table tops have been widely used in all sorts of public rooms where tables receive severe service—in restaurants, hotels and steamships. The tops may be extremely colorful and the possibility of inlaying varied designs has raised the decorative level of the room. The edges may be black and silver, colors and silver, colors and white in the six-sided veneer tops or natural aluminum color in the type M top.



● Formica Wall and Column Covering and Formica Top in the Cocktail Lounge of the Regent Palace Hotel, London, England.

● An odd use of Formica colors on the store front of the Pig 'n Whistle Cocktail Lounge at Los Angeles, California.

● Formica Kitchen Cabinet Tops and Wainscoting in a house at Raeburn, Cincinnati, Ohio.

● Black Formica Doors, Main Entrance, J. Blach & Son, Birmingham, Ala. Warren, Knight and Davis, Architects.

● Fruit Juice Stand with Formica Panels, Tampa Terrace Hotel. Installed by Stovall & Archer, Tampa, Fla.

Formica table tops are built by veneering $\frac{1}{16}$ inch Formica sheet to five-ply wood. If "cigarette-proof" grade is specified, the tops are guaranteed not to be injured by lighted cigarettes. The six-sided tops are finished with waterproof ply of Formica on the bottom to prevent warping.

Counter Panels—Formica panels for all kinds of counters, bars, lunch counters, soda fountains—are made in all the Formica colors, in polished or satin surface, with colored or metal inlays if desired. Sometimes they are $\frac{1}{16}$ inch Formica glued to plywood as in the case of table tops.

Wainscot—This may be erected with bright metal cover strips over the joints between the Formica sheets or it may be flush joint construction. If cover strips are used the Formica sheets are nailed to wood grounds, at the edges of the sheets and the nail heads then covered with the cover strips. For this purpose Formica sheet on a presdwood center $\frac{5}{32}$ inch thick is used. For flush joint construction $\frac{1}{32}$ inch sheet is recommended with tongue and grooved wood strips glued to the edges of the sheet, or with special hardware fastenings attached to the back of the sheets. Drawings at the back of the book show both of these methods of erection. More detailed directions are available in a special Formica publication devoted to wainscot. The material is installed by carpenters. Sheet sizes are 36x42, 84 and 96 inches, and 24x42, 84 and 96 inches.

Basing and Mop Boards—Formica is used for basing on show cases or mop boards in rooms in the form of molded channels—made in widths of 4 to 8 inches, with no fractional inch sizes—and backed with wood. It may be provided with nails protruding from the wood backing so that it has merely to be pounded into place. This basing has either a beveled or round top. In building show cases some makers employ $\frac{1}{16}$ inch sheet as basing gluing it to the bottom of the case. The material is resistant to alkalies in washing solutions and will give long service without deterioration of the surface.

Doors of Formica—These are flush type doors with smooth even surfaces. They are available in all colors and with such inlays in metal or Formica as may be desired. Photo inlays are also specified and are made by veneering $\frac{1}{16}$ inch Formica to specially constructed door cores with hardwood where the hinges are attached. Fireproof doors may also be provided by attaching Formica $\frac{1}{16}$ inch decorative sheets to standard Kalamein doors.

Revolving Doors—Revolving doors and revolving door housings are now offered by leading makers of revolving doors and may be in colors with inlays.

Elevator Doors—Formica surfaces with inlays in metal or Formica colors are now available in standard elevator doors.

Kick Plates and Push Plates—These are cut from Formica sheet in any color or grade $\frac{3}{32}$ or $\frac{1}{8}$ inch thick. The edges are beveled and countersunk screw holes are provided for fastening them in place.

● Formica Bar on Daylight trains between Los Angeles and San Francisco. Translucent panels with illuminated design. Formica table tops. Designed and installed by the Pullman Company.

● Formica Doors at the entrance to the Congress Hotel Casino, Chicago. Holabird & Root, Architects.

Window Stools—These are made by molding a Formica channel and gluing wood into it. The ends are veneered with Formica sheet. Stools are fabricated to dimensions at the factory.

Kitchen Table Tops—On tops for kitchen cabinets, butlers' dressers and breakfast tables, Formica is applied veneered to plywood if there is no sink in the top. When there is a sink Formica is cemented with waterproof cement to an asbestos core. The edges of the sink hole, whether it has square or round corners, are covered with Formica. There is a backsplash of Formica cemented to sheet metal and a watertight joint between the cabinet top and the backsplash. Cabinet tops of this type may be built with end splashes and also with a raised edge at front and ends to keep water from running off the top. Another type of cabinet top has been developed in which the working surface consists of a solid Formica sheet. It is shipped with ¾ inch thick back splash and with a monel metal or porcelain sink attached. This type of top is available at moderate prices up to 96 inches long.

Formica Store Front Bulkheads—Formica store front sheets are available in all the Formica colors, are not injured by moisture and as they have a low co-efficient of thermal expansion do not crack because of sharp changes in temperature. For this purpose Formica sheet $\frac{11}{32}$ inches thick with a hardwood center is used. For the higher portion of the front $\frac{3}{32}$-inch sheet and metal molding may be employed if desired. The $\frac{11}{32}$-inch sheet may be provided for this purpose with hardware attached to the back which makes a concealed flush joint fastening possible.

Formica Tops for Bedroom Furniture—In hotels, clubs and steamships where the tops of bed and stateroom furniture are sometimes marred by smokers, they may be protected by a "cigarette-proof" sheet. These may be put on at the factory or may be cemented or mechanically attached to the tops after they are in use.

Elevator Cab Interiors—Formica on hardboard may be used for this purpose. It will stand wear and will not be injured by moisture from umbrellas, wet raincoats, etc. It is also used for elevator lobbies in hotels, department stores and public buildings.

Ornamental Signs—Formica signs may be produced by inlaying lettering in another Formica color or in metal. Signs may also be printed in gold or silver by the Verichrome process.

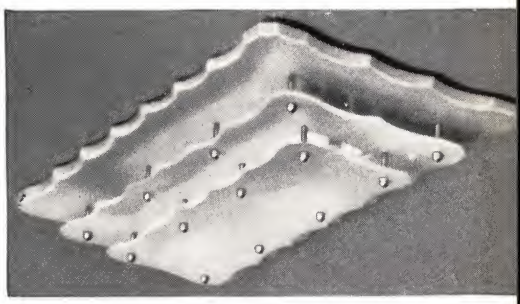
Formica Library Shelving—Formica is used in the new annex to the Congressional Library for shelving, telephone booths and the fronts of card index drawers.

Translucent Formica—This is made in white and several colors. It may be had with an opaque face in any Formica color. When the opaque face is sand-blasted away in the form of lettering or design, a sign which may be illuminated from behind is left. Translucent Formica is made in sheets only in varying thicknesses, but these may be bent on a short radius and if mechanically held in position may be used for many of the same purposes as tubing. Modern lighting fixtures using translucent sheet in flat form have been designed and can be provided by certain fixture manufacturers.

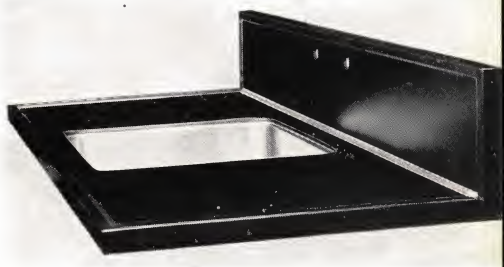
Fabrication and Distribution—The main plant of the FORMICA INSULATION COMPANY at Cincinnati carries many varieties of Formica sheets in stock and produces sheets to order in about a week. There are branch factories with stocks and cutting equipment in New York and Chicago. The material is fabricated to architects' details for erection by others.

Special publications are available giving more detailed information on Soda Fountains, Wainscoting and Doors.

● Sesqui Centennial Shrine, designed by Sesqui Centennial Commission. Veneered with Formica in Brown Marble.



● Formica Lighting Fixture made with flat plates of Translucent Formica. It is modern, easily cleaned and not easily broken.



● Formica Kitchen Cabinet Top with attached sink and back splash shipped from the Formica factory assembled.

● Formica Sheet with inlay in color and metal on the walls of a bathroom.

B—No. 197

B—No. 112

B—No. 224

B—No. 102

B—No. 113

B—No. 328

B—No. 238

B—No. 107

B—No. 331

B—No. 342

B—No. 109

B—No. 115

B—No. 319

B—No. 32

B—No. 114

B—No. 106

B—No. 59

B—No. 105

B—No. 278

B—No. 35

B—No. 476

B—No. 101

B—No. 116

B—No. 389

B—No. 110

B—No. 108

B—No. 103

B—No. 111

B—No. 386

B—No. 524

B—STUMP WALNUT—No. 1601

B—LIGHT WALNUT—No. 1602

B—LIGHT MAPLE—No.1603

B—LIGHT OAK—No. 1604

B—No. 1612

B—DARK WALNUT—No. 1626

B—BLACK AND GOLD—No. 1701

B—VERDI ANTIQUE—No. 1702

B—BROWN MARBLE—No. 1703

D—No. 24

D—No. 29

D—No. 31

B—No. 282

G—No. 1113

G—No. 1197

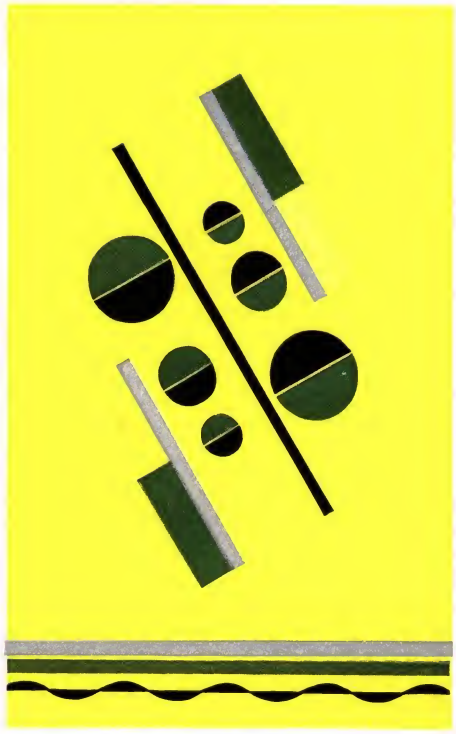
G—No. 1386

H—No. 902

H—No. 903

H—No. 904

H—No. 905



METAL AND FORMICA INLAY

H—No. 1111

H—No. 2113

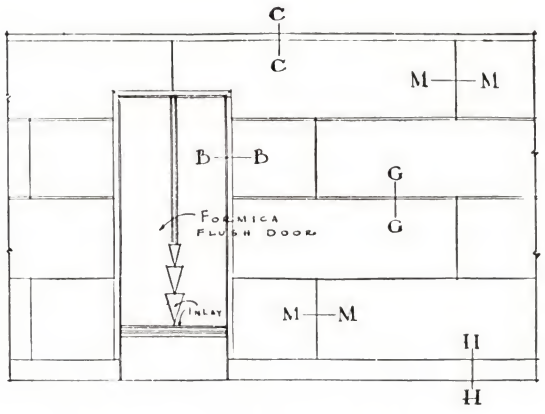
H—No. 2116

H—No. 4032

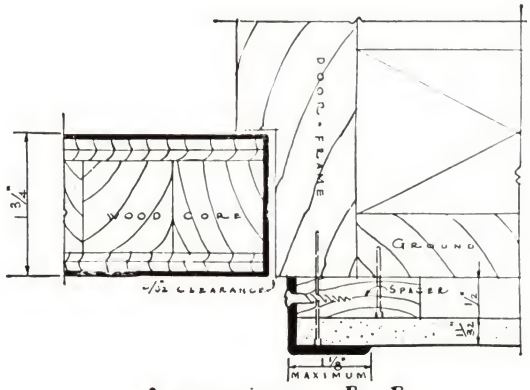
H—No. 5197

H—No. 6113

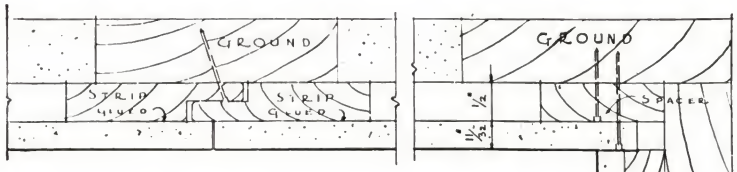
FORMICA



WALL - ELEVATION

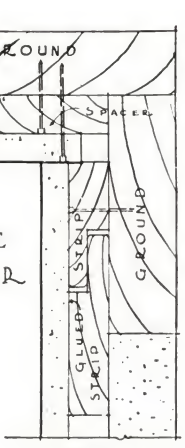


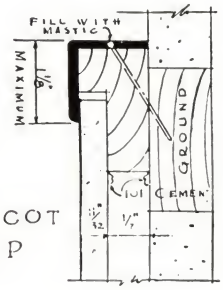
SECTION - B - B



M - M

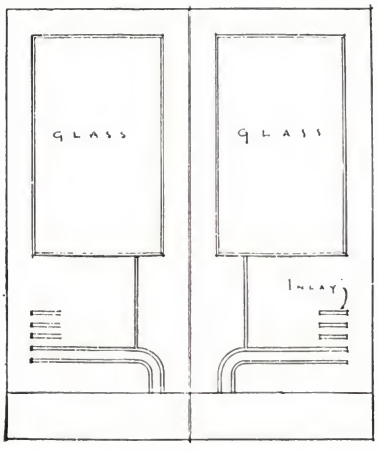
INSIDE CORNER





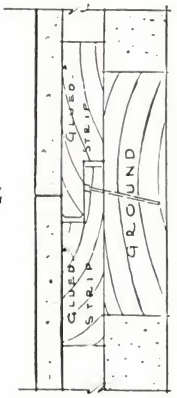
WAINSCOT CAP

DOOR - SECTION

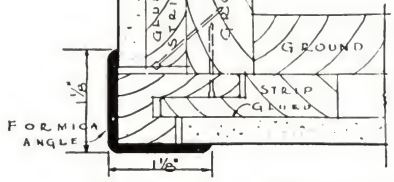


ELEVATION

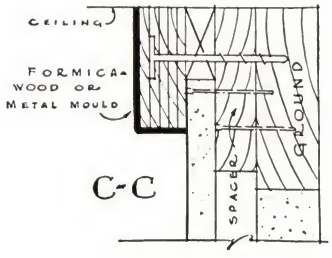
FORMICA - DOORS



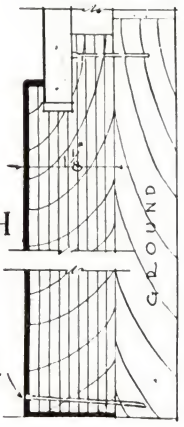
G - G



OUTSIDE CORNER



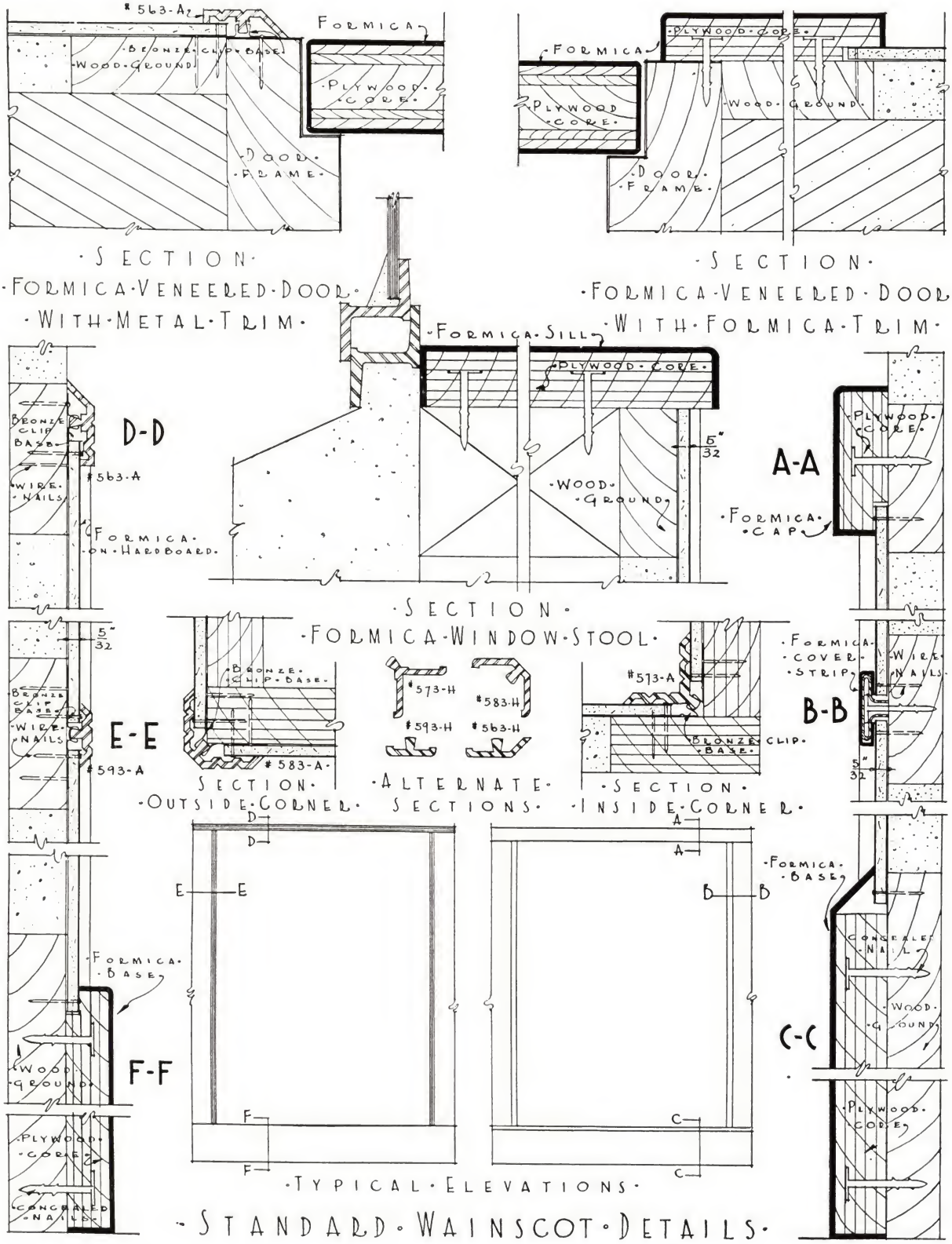
C - C



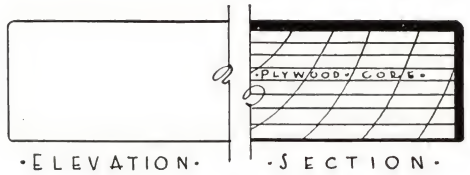
H - H

- INTERIOR - FLUSH - JOINT - WAINSCOT -

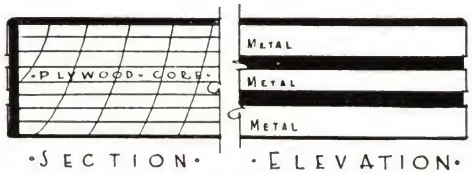
FORMICA


#563-A
FORMICA
BRONZE CLIP BASE
WOOD GROUND
PLYWOOD CORE
DOOR FRAME
SECTION
FORMICA VENEERED DOOR
WITH METAL TRIM
PLYWOOD CORE
FORMICA
PLYWOOD CORE
WOOD GROUND
DOOR FRAME
SECTION
FORMICA VENEERED DOOR
WITH FORMICA TRIM
FORMICA SILL
PLYWOOD CORE
5/32"
WOOD GROUND
SECTION
FORMICA WINDOW STOOL
D-D
BRONZE CLIP BASE
#563-A
WIRE NAILS
FORMICA ON HARDBOARD
A-A
PLYWOOD CORE
FORMICA CAP
5/32
BRONZE CLIP BASE
WIRE NAILS
E-E
#593-A
#583-A
SECTION
OUTSIDE CORNER
#573-H
#583-H
#593-H
#563-H
ALTERNATE SECTIONS
#573-A
BRONZE CLIP BASE
SECTION
INSIDE CORNER
FORMICA COVER STRIP
WIRE NAILS
B-B
5/32"
D
D
E
E
F
F
TYPICAL ELEVATIONS
A
A
B
B
C
C
FORMICA BASE
FORMICA BASE
WOOD GROUND
F-F
PLYWOOD CORE
CONCEALED NAILS
CONCEALED NAIL
WOOD GROUND
C-C
PLYWOOD CORE
STANDARD WAINSCOT DETAILS

FORMICA

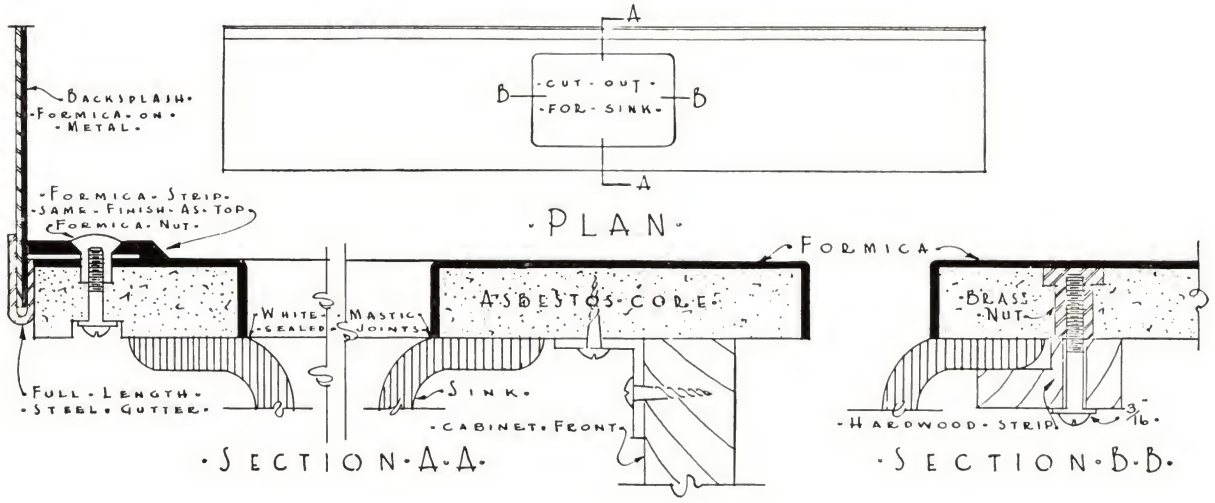


PLAIN EDGE

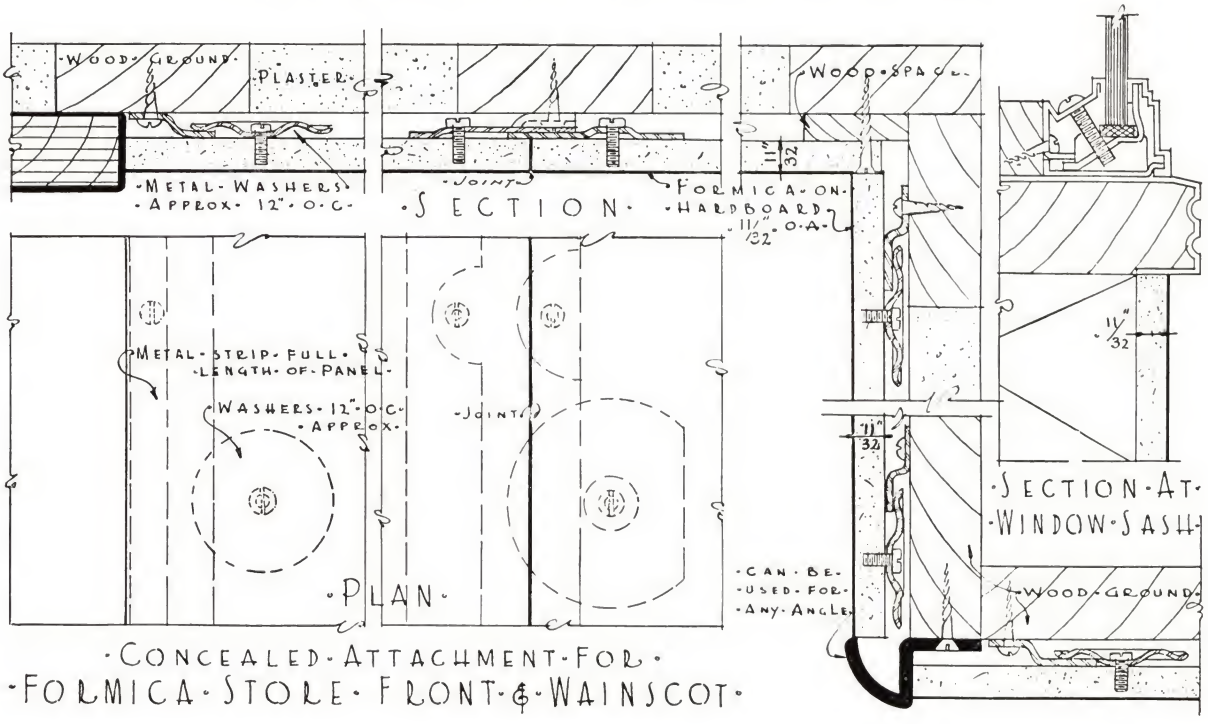


GROOVED METAL EDGE

COUNTER & TABLETOP CONSTRUCTION



FORMICA DRAINBOARD CONSTRUCTION



CONCEALED ATTACHMENT FOR
FORMICA STORE FRONT & WAINSCOT

● Formica Elevator Doors with inlay in metal. Installed at the McCurdy Hotel, Evansville, Ind., by the Kaylor Company, Peoria, Ill.

● Formica Walls and Ceilings in a corridor of the Shoreham Hotel at Washington, D. C.

● Formica Tops, dull black cigarette-proof. Installed with Hoosier New Style Sink at St. Louis, Mo., by E. J. Hugenot.

● News Stand erected by the City of New York with a Formica exterior surface.

● Formica Desk and Cabinet Top on the Super Chief Streamlined Train of the Santa Fe Railroad from Chicago to Los Angeles.

● Formica Table Tops in the cafeteria of the Supreme Court Building, Washington, D. C.

● Formica Desk Tops and Deal Plates, Norristown, Pa., Post Office, Supervising Architect Treasury Department.

● Formica Wood Finish Wall Paneling behind the main desk of the Waldorf Astoria Hotel, New York City.

● Formica Horseshoe Counter, May Department Store, Baltimore, Md. Installed by Reinle-Salmon Company.

● Formica Tops with center sliding unit in Elizabeth Arden's Beauty Salon, Chicago. Holabird & Root, Architects.

● Formica Wall Paneling in the Entrance Lobby of the Bertha Theatre, Chicago.

● Formica Desk Top in the office of Gilbert Rhode, Designer, New York City.

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JOHNS-MANVILLE

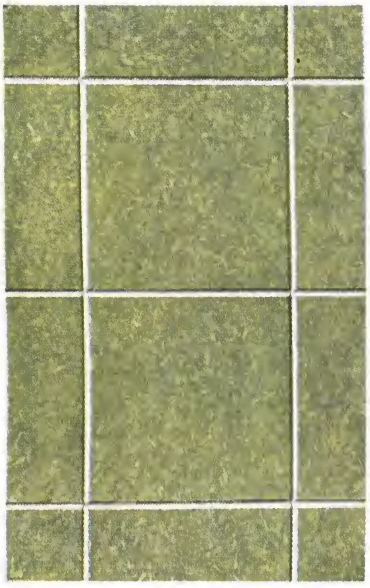
EXECUTIVE OFFICES

22 E. 40th St., NEW YORK

Products

J-M Asbestos Flexboard and Wainscoting. For the following Johns-Manville products, see File Index: Insulating Board and Insulating Lath; Asphalt Tile Flooring; Acoustical Treatment and Sound Isolation; Transite, Flat and Corrugated Sheets; Home Insulation; Built-up Roofing; Roof Insulation; Asbestos and Asphalt Shingles; Pipe Covering and Insulation; Steeltex for Plaster, Stucco and Brick Veneer; Steeltex Floor Lath.

JOHNS-MANVILLE ASBESTOS FLEXBOARD



Green
(also available in plain sheets)

Light Gray
(also available with tile scoring)

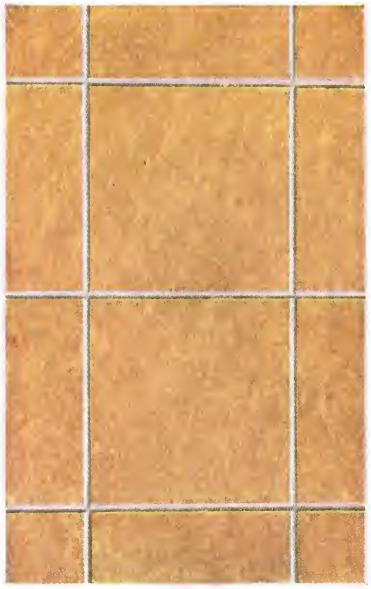
Rose
(also available with tile scoring)

Slate
(also available with tile scoring)

This colorful, fireproof, permanent, asbestos-cement sheet is so flexible that it can be made to conform to surfaces having a considerable curve; so workable that it can be sawed and nailed like wood; and so easy to handle that it can be applied as quickly and easily as any fibre board. Its large sheets cover the wall quickly with the minimum number of vertical joints.

Asbestos Flexboard is made in two styles, Decorative and Standard: Decorative, designed to provide colorful, sanitary, decorative wall finishes in homes, offices, stores or public buildings; Standard for a wide range of utilitarian uses, indoors and out. Details of these styles are discussed in the following pages.

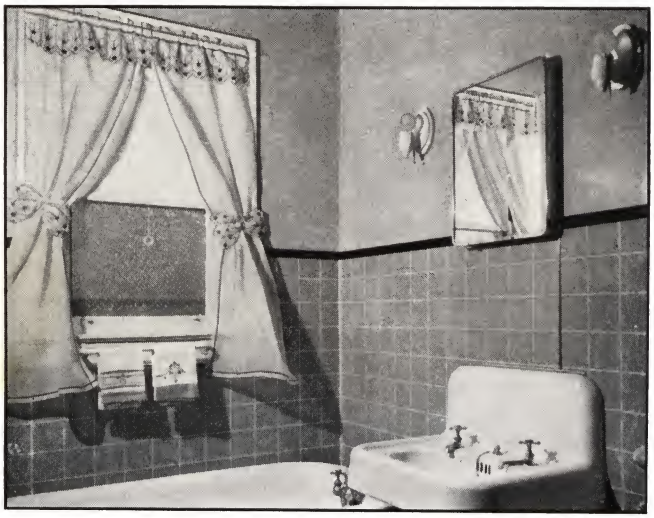
The low cost of Asbestos Flexboard not only recommends it for new work but also solves one of today's major building problems — the wall re-surfacing of existing structures that must be modernized on limited budgets.



Buff
(also available in plain sheets)

"Keyhole Bar," Hotel Belmont-Plaza, New York City, designed by Tony Sarg, the famous artist

The ability of J-M Asbestos Flexboard to conform to curved surfaces is well illustrated here, both by the bar and by the arch over the mirror. The walls also are of Flexboard, decorated with a series of murals by Mr. Sarg.



J-M Asbestos Flexboard, scored for wainscot and plain for upper wall, makes a modern bathroom out of an old one

This attractive basement room has walls of green Decorative Flexboard, backed with J-M Insulating Board. Note the curved bar front, which is also of Flexboard

J-M Decorative Asbestos Flexboard

As a distinctive wall finish for new or old work, Decorative Asbestos Flexboard is furnished either in plain or scored sheets, with a smooth, lustrous, factory-applied wax finish. The material has an attractive grain, due to its asbestos fibre content, and is available in five shades—green, buff, light gray, rose and slate. The colors of Decorative Flexboard are not surface coatings; they are an integral part of the material itself.

Decorative Flexboard is highly wear-resistant. It is so hard that it can be marred only by excessive abuse, yet it is readily sawed and nailed and may even be curved to a considerable extent.

In new construction, Decorative Flexboard is applied over a solid base of plywood or similar material. On old walls, it may be applied directly over the old plaster, or other solid grounds.

The sheets of Flexboard are usually fastened with chromium-plated escutcheon pins. Joints may be flush, beveled, battened or covered with mouldings of polished metal, which may be used in addition to nailing.

In kitchens, lavatories, game rooms, beauty salons, barber shops, florist shops, department stores, restaurants, show rooms, stores, corridors and lobbies; wherever a colorful, decorative and sanitary finish is desired, Johns-Manville Decorative Flexboard is not only the ideal material, but the most economical as well.

Decorative Asbestos Flexboard is furnished scored (4″ c-c) in sheets 4′ x 4′ x ⅛″. Also furnished *unscored* in sheets 4′ x 8′ x ⅛″. Decorative Flexboard Battens, for use over joints, are furnished in 4 ft. lengths, in widths of 1¼, 2 and 4 in.

Unscored Decorative Flexboard in horizontal panelling provides an attractive wall treatment at little cost. The colors conform delightfully with modern interior decoration

J-M Standard Asbestos Flexboard

J-M STANDARD ASBESTOS FLEXBOARD is a large, asbestos-cement sheet for a wide range of utilitarian uses, both in and out of doors. It is fireproof and permanent. Its surface is cement-like in nature and can be left unfinished if moderate color variation is not objectionable. It can be painted after priming with linseed oil, two coats.

Applied over studs or furring in new construction, or right over the old plaster walls in existing buildings, it provides an attractive, permanent wall finish.

The uses for Standard Flexboard are virtually without number. They include permanent partitions, door facings, open porch ceilings and garage lining; table tops, fire-resistant storage room and laundries; also summer bungalows, roadside stands, overnight cabins and boat houses; truck bodies, elevator shafts and fur storage vaults; and the lining of farm buildings such as chicken houses, brooder houses and milk houses, over insulation.

Because it is made of imperishable minerals, Flexboard will not rot or disintegrate. Rodents and vermin cannot pass through it. Although it readily takes paint, it needs no preservative treatment of any sort, either indoors or out. For special tile effects, the scored sheets can be painted to suit.

Where protection from heat or cold is desired, J-M Asbestos Flexboard should be applied over a backing of J-M Insulating Board, or J-M Home Insulation batts should be installed between the studs, joists or rafters.

Standard Asbestos Flexboard is made only in unpolished, buff-colored sheets, in two styles: 4′ x 8′ x 1/8″ thick sheets, scored on 4″ centers and 4′ x 8′ sheets, unscored, in thicknesses of 1/8″ and 3/16″.

J-M Standard Flexboard provides a clean, fireproof lining for garages

The entire interior of this plant (walls, ceiling, and elevator shaft) is constructed of J-M Standard Flexboard

The interior of this New York City flower shop was entirely remodeled with J-M Standard Flexboard. To add lustre to the effect, the Flexboard was then varnished

Standard Flexboard, painted in colors of the owner's selection, makes an excellent exterior treatment

Application of Asbestos Flexboard

Asbestos Flexboard $\frac{3}{16}$" thick may be nailed direct to studding or rafters. In the $\frac{1}{8}$" thickness, a solid backing, which may be an existing board or plaster surface, or J-M Insulating Board, is recommended. Either 4d casing nails or escutcheon pins should be used. The material can be nailed close to the edge without cracking. For nail spacing, see details below.

Asbestos Flexboard can be applied to curved surfaces with the following limitations:

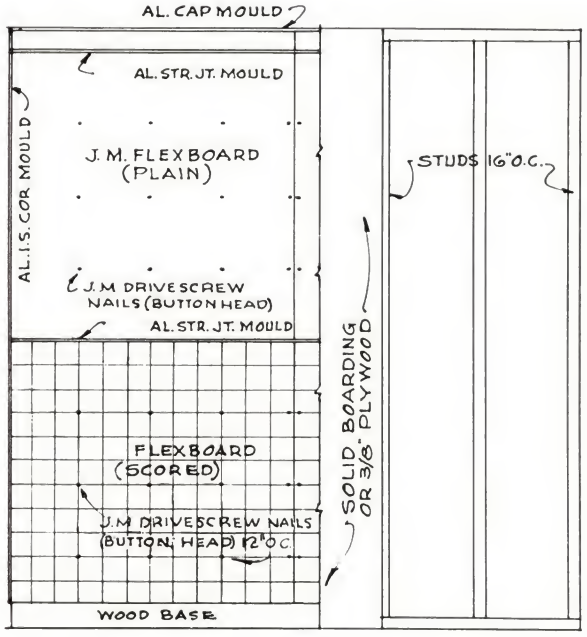
Thickness of sheets, in.	Longitudinal radius, in.	Transverse radius, in.
$\frac{1}{8}$	22	27
$\frac{3}{16}$	34	48

Joints between the sheets may be either square or beveled. Battens or metal trim can be used, as desired.

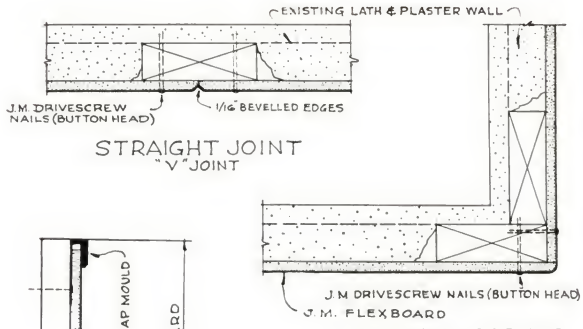
Battens, where used, can be either Flexboard (as described on page 2), or strips carefully cut from Flexboard sheets. If there is no fire hazard, wood batten strips may be used.

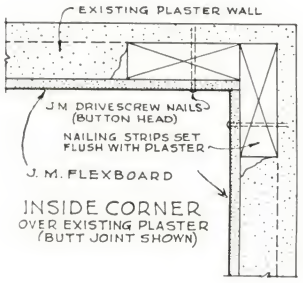
Where the decorative effect of metal trim is desired, aluminum mouldings are available. Their polished exposed faces combine attractive appearance with unusual resistance to corrosion. Extruded aluminum is easily workable. At intersections, mouldings can be coped and mitered with a hacksaw. Nails can be driven through the flanges, a shallow groove $\frac{1}{4}$" from the edge acting as a guide.

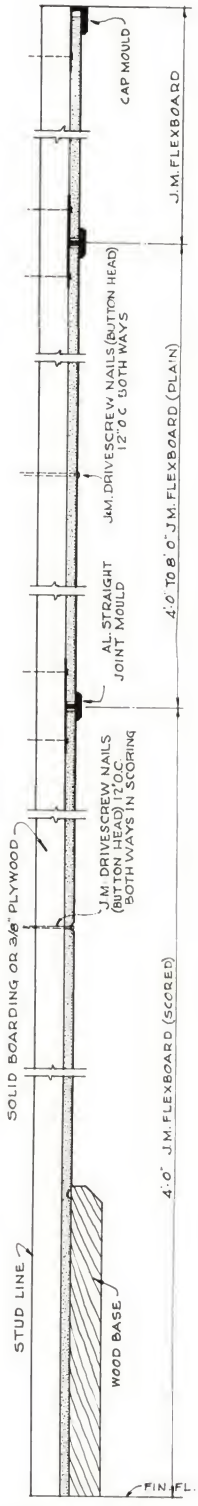
Aluminum mouldings are furnished in four forms: Cap moulding, outside corner moulding, inside corner moulding and straight joint moulding. The cap moulding may be applied first and the Flexboard slipped into it. When applying an outside corner moulding or straight joint moulding, it is permissible to nail one flange only. The other flange may be slipped into place under the sheet of Flexboard already applied.



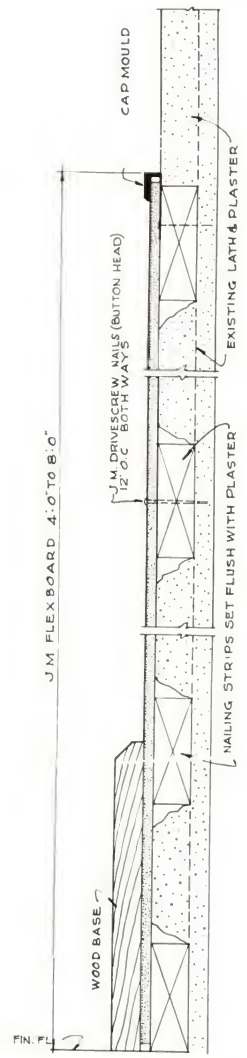
FULL HEIGHTH FLEXBOARD WALL OVER SOLID BOARDING







SECTION THRU FLEXBOARD WALL
CEILING HEIGHT - SCORED WAINSCOT PLAIN SHEETS ABOVE AND ALUMINUM MOULDS (NEW WORK)



SECTION THRU FLEXBOARD WAINSCOT
OVER EXISTING PLASTER WALL ALUMINUM MOULDS USED (OLD WORK)

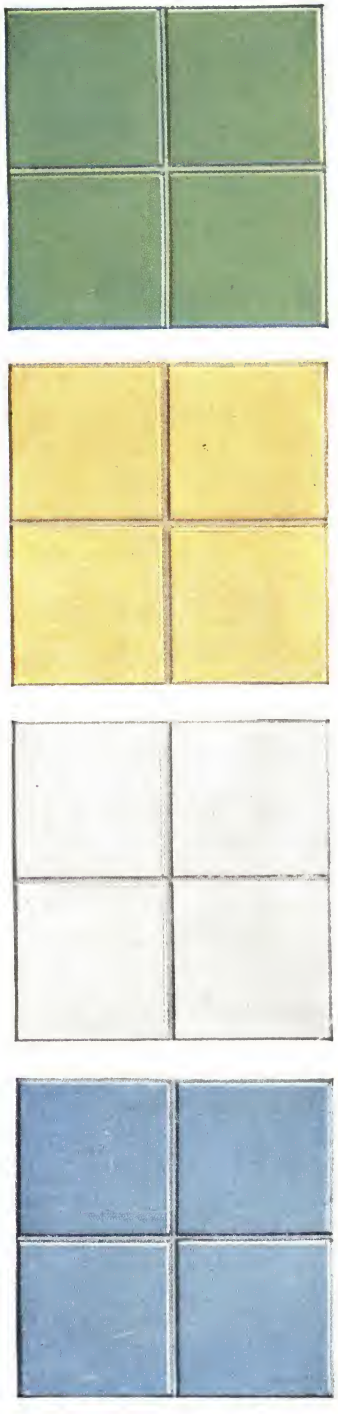
JOHNS-MANVILLE ASBESTOS WAINSCOTING

Johns-Manville manufactures three types of Asbestos Wainscoting, known as marbleized, tile design and color panels, which provide, at only a fraction of the cost, the effects and advantages of more expensive materials.

In the marbleized type, Johns-Manville has faithfully reproduced four of the finest marbles obtainable, the colors and mottling of which are illustrated below. The finish of these reproductions is so identical with the originals that it is almost impossible to distinguish the asbestos wainscoting from the actual marbles.

The tile design affords the wide choice of the attractive colors shown below and also a lustrous black. All these colors are also available, without the tile effect, in plain sheets known as color panels.

Tile (or Plain) Design



Colors:
Light Green, Ivory, White, Light Blue
(Black on special order)

J-M Asbestos Wainscoting Details

J-M Asbestos Wainscoting—available in three finishes—is made of asbestos fibre and Portland cement, moulded under great pressure into rigid, fireproof sheets. The three finishes available provide, respectively, the effect of tile, marble, or plain colored surfaces.

The face surface has a special "baked-on" finish which will not crack or craze and which will stand up under any normal conditions of use. It is sanitary and can be cleaned with ordinary soap and water. Cap and base units of the same material, similarly finished, are available.

The tile design sheets have moulded joint markings forming four inch squares, which gives the effect of 4″ tile set in cement. The tile design, with matching cap, base and outside corner strip, are furnished in black, white, ivory, light green and light blue, with the tile joint marking in white, except on white tile, which is marked in gray.

The marbleized design sheets are reproductions of the surface appearance, in identical detail, of the four marbles—Verde Antique, Black and Gold, Jaune Fleuri and Breche Rose, as illustrated here. Wherever the effect of fine marble is desired, as in foyers, banks, smart shops and sales rooms, Johns-Manville Marbleized Wainscoting answers every requirement at only a fraction of the cost. It is also being increasingly used for bathrooms in homes of all types.

In the third type — designated as Color Panels — the sheets are furnished in black and the other colors of the tile design, but are unscored. With cap and base moulding in the same or contrasting color, or black, J-M Color Panels give effects in decoration which are modern, attractive and yet inexpensive.

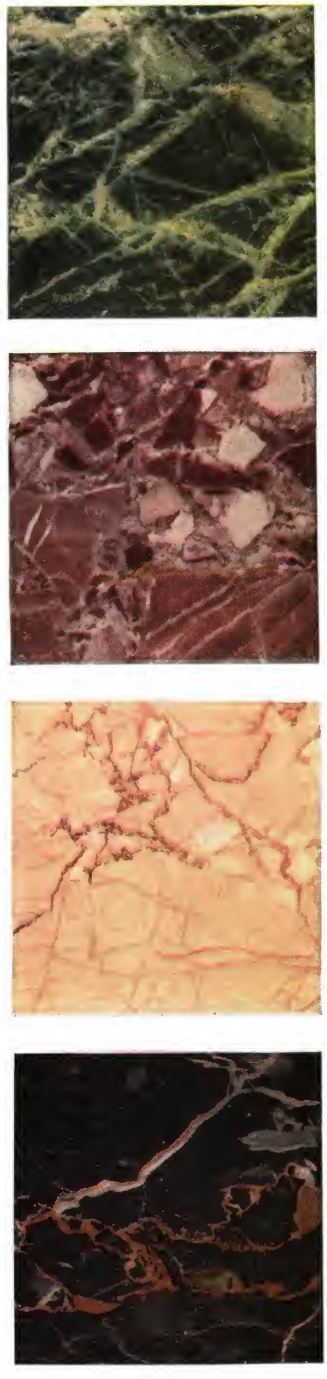
Tile design and color panels come in sheets 48″ x 48″ x ¼″; the marbleized type measures 32″ x 48″ x ¼″. The base and cap units are 4 ft. long; the tile base 5″ wide, the marbleized base 6″ wide; the tile cap 1½″ wide, the marbleized cap 3″ wide. The sheets weigh approximately 3.0 pounds per square foot.

Accessories for J-M Asbestos Wainscoting

For securing the various units, special nails are provided for the tile and color panel finishes and chromium plated round head wood screws or nails for the marbleized finish. Lacquer-enamel of the proper color for touching-up over the nail heads accompanies each shipment.

Chromium plated strips, or brass strips finished to match the wainscoting, are available for installations of the tile or color panel designs, for finishing corners and joints between sheets.

Marbleized Design



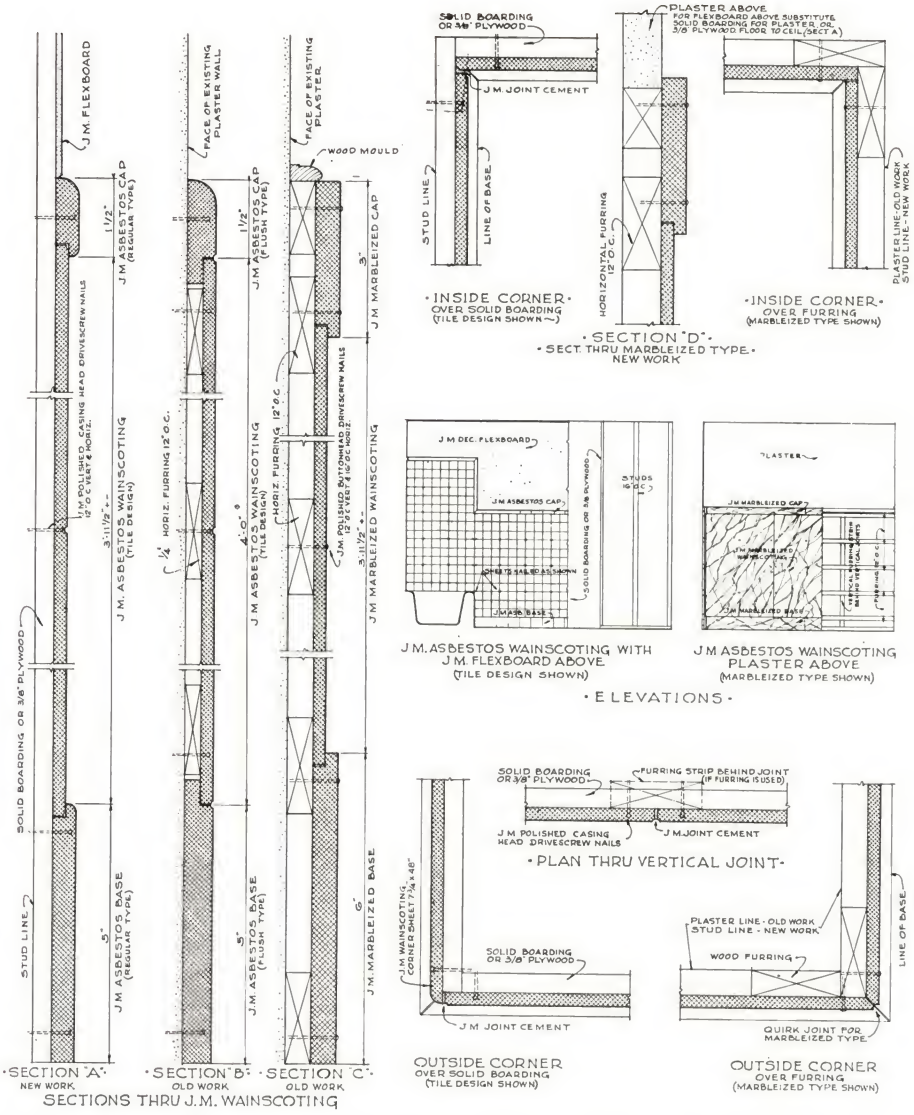
Colors:
(reading down)
Verde Antique
Breche Rose
Jaune Fleuri
Black & Gold

Application of J-M Asbestos Wainscoting

J-M Asbestos Wainscoting can be applied by anyone familiar with ordinary tools, the various units involved being readily cut with a hack-saw and drilled with an ordinary twist drill. Installations may be made over new or existing work, fastened to studs in wood frame construction or wood grounds in other types. Such surfaces as are to receive the wainscoting should first be covered with a layer of J-M Insulating Board.

The standard wainscoting sheets are secured at the top and bottom by the cap and base, these units being rabbetted to receive them. Intermediate fastening is provided by special nails or screws, the former being set and touched up with lacquer-enamel, making them practically indiscernible. The cap and base units should be similarly fastened.

The intermediate joints are formed butted in white lead, excess of this material being wiped off after the sheets have been secured. Inside corners are similarly formed. Outside corners may be mitered or, in the case of the tile and color panel designs, may be finished with the metal corner strip available.



When wainscoting is applied in shower stalls and around bath tubs, the joints are waterproofed with J-M 15-lb. Asbestos Waterproofing Felt applied over the entire area covered by the wainscoting. The felt is lapped 3″ horizontally and 6″ vertically, and the bottom edge allowed to flash over rim of tub or shower curb. Joint cement is applied to the edges of the wainscoting sheets and on the backs for ½″ along the bottom edges. The sheets must be firmly set in the cement before fastening, and the excess cement removed before it dries.

SHORT FORM SPECIFICATION FOR FURNISHING AND APPLYING JOHNS-MANVILLE ASBESTOS WAINSCOTING

(As the furnishing and applying of this material is generally made a part of the carpentry specifications, the following has been prepared to be so included.)

Note: *The following information relates to work allied with the application of the Wainscoting and should be provided for in the specifications for the work involved.*

Studs shall be spaced at 16″ centers and so located as to allow the erection of the sheets of Wainscoting with the least amount of cutting and to the most symmetrical arrangement. Studs or grounds shall be provided at all points where nailing is to be done. Grounds shall be provided, to which bath room accessory fittings, etc., are to be secured.

In fire proof construction, grounds shall be set to receive all nailing.

The contractor shall furnish and install Johns-Manville Asbestos Wainscoting (*state whether "Tile Design," "Marbleized Design" or "Color Panel Design"*) to (*state in detail surfaces to be covered*) and Johns-Manville Asbestos Base and Cap.

Height—The Wainscoting shall be erected to a height of (*state height or "as shown on drawings"*).

Color—The Wainscoting shall be (*state color*), the base and cap (*state color*).

Insulating Board Backing — Johns-Manville Insulating Board shall be installed as a backing over which the Wainscoting shall be erected.

Installation—The Wainscoting and accessories shall be installed in strict conformity with the printed instructions of the manufacturer.

Note: *If this Contractor is to include the erection of the bath room accessory fittings, such as towel bars, etc., so state, including a list of such fittings.*

KEASBEY & MATTISON COMPANY

AMBLER, PA.

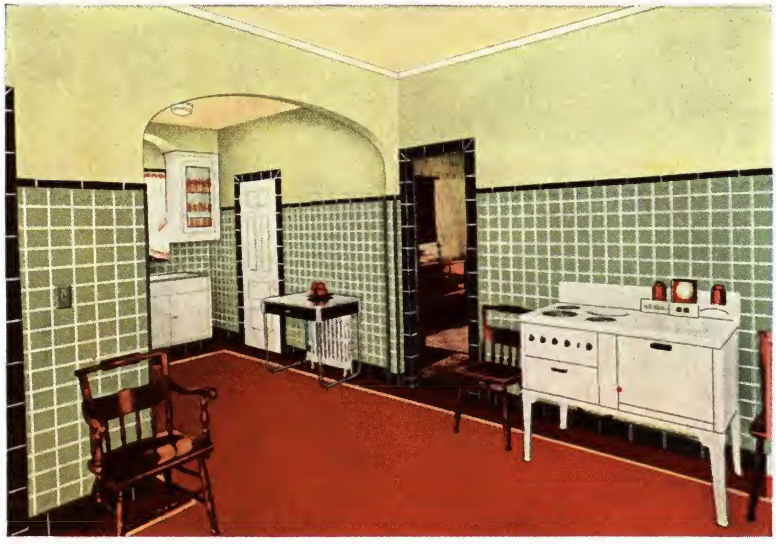
DISTRICT OFFICES IN PRINCIPAL CITIES

For K&M Asbestos Roofing and Siding Shingles, Mineral Wool and Pipe, Sheet and Block Insulations, Sidewall and Ceiling Erection System, Asbestos Corrugated and Trafford Tile, see File Index

K&M ASBESTOS WALTILE

K&M Asbestos Waltile is a strong, rigid sheet material made of asbestos fibre and Portland Cement. Prior to finishing the product, the sheets are impregnated with a waterproofing agent and sanded to provide a perfect finish for the application of lacquers.

The scoring that marks the sheets into 4 in. squares and the half scoring on the edges of the sheets are wheel cuts. The scoring is furnished lacquered. Lacquered scoring is particularly desirable because it prevents the accumulation of dust.



WEIGHTS, SIZES AND SHIPPING DATA

K&M Waltile is supplied in sheets 32 in. by 48 in. by 3/16 in., scored 4 in. by 4 in. Packed and shipped in wooden crates containing ten sheets, weighing approximately 240 lbs.

STANDARD SHEET AND SCORING COLORS

Standard Color of Sheets	Standard Scoring Color	Special Scoring Colors Not Stocked
White	Buff	Chinese Red, Black, Green
Black	White	Chinese Red, Green
Pink	White	Black
Nankin Blue	White	Black
Apple Green	White	
Buff	White	Black

ACCESSORIES

K&M Asbestos Waltile is held in place at the bottom by K&M Asbestos Waltile Base which is rabbeted and rounded to receive the tiled sheets. The base is of the same material as the sheets and measures 4 ft. long, 3/8 in. thick and 4 or 5 in. wide. The top is held by similarly constructed K&M Asbestos Waltile Cap which measures 4 ft. by 3/8 in. by 1 7/8 in. Band moulding measures 4 ft. by 3/8 in. by 1 7/8 in., and is designed to receive sheets on both sides. Base, Cap and Band may be secured scored every 8 inches and are also furnished plain (without scoring). Scoring is colored to match the sheets.

Metal connectors, Outside Corners and Inside Corners are available for covering joints and securing sheets to the wall. Metal strips are furnished Chromium plated or in same colors as sheets.

K&M DECORATIVE SHEETFLEXTOS

Decorative Sheetflextos is a fire-resisting wall board, furnished in Buff, Rose, Black and Green either plain or scored. It is a laminated sheet, made of asbestos fibre and Portland cement, colored with mineral pigments and finished with a polished wax surface. It is extremely flexible, for a hard wall board. Suitable for kitchens and laundries, restaurants, corridors of office buildings, or as a lining for replacing wood, plaster or sheet metal.

It is supplied in two types, "Plain" and "Scored". *Plain* Decorative Sheetflextos is furnished in sheets 4 ft. wide by 8 ft. long in 1/8" thickness only. Packed 8 sheets per package, containing 256 sq. ft. and weighing approximately 365 lbs. Colors are Buff, Rose, Black and Green. *Scored* Decorative Sheetflextos is furnished in sheets 4 ft. wide by 4 ft. long in 1/8" thickness only. Packed 10 sheets per package, containing 160 sq. ft. and weighing approximately 230 lbs. Sheets are scored in 4 in. squares and the score marks are striped in gray, with the exception of scoring on black sheets, which carry black scoring as standard. Sheets are available in Buff, Rose, Black and Green.

COLOR RANGE OF DECORATIVE SHEETFLEXTOS

Green Buff Black Rose

K&M STANDARD SHEETFLEXTOS

K&M Standard Sheetflextos, a laminated asbestos-cement sheet material of a natural light buff color, is ideal for industrial and general building use, as a fire-stop partition or an unburnable lining for ceilings and walls. Furnished in flat unscored sheets 48 in. wide by 96 in. long and 1/8 in. thick. Supplied 4 sheets per package and containing 128 sq. feet and weighing approx. 145 lbs.

K&M LINABESTOS

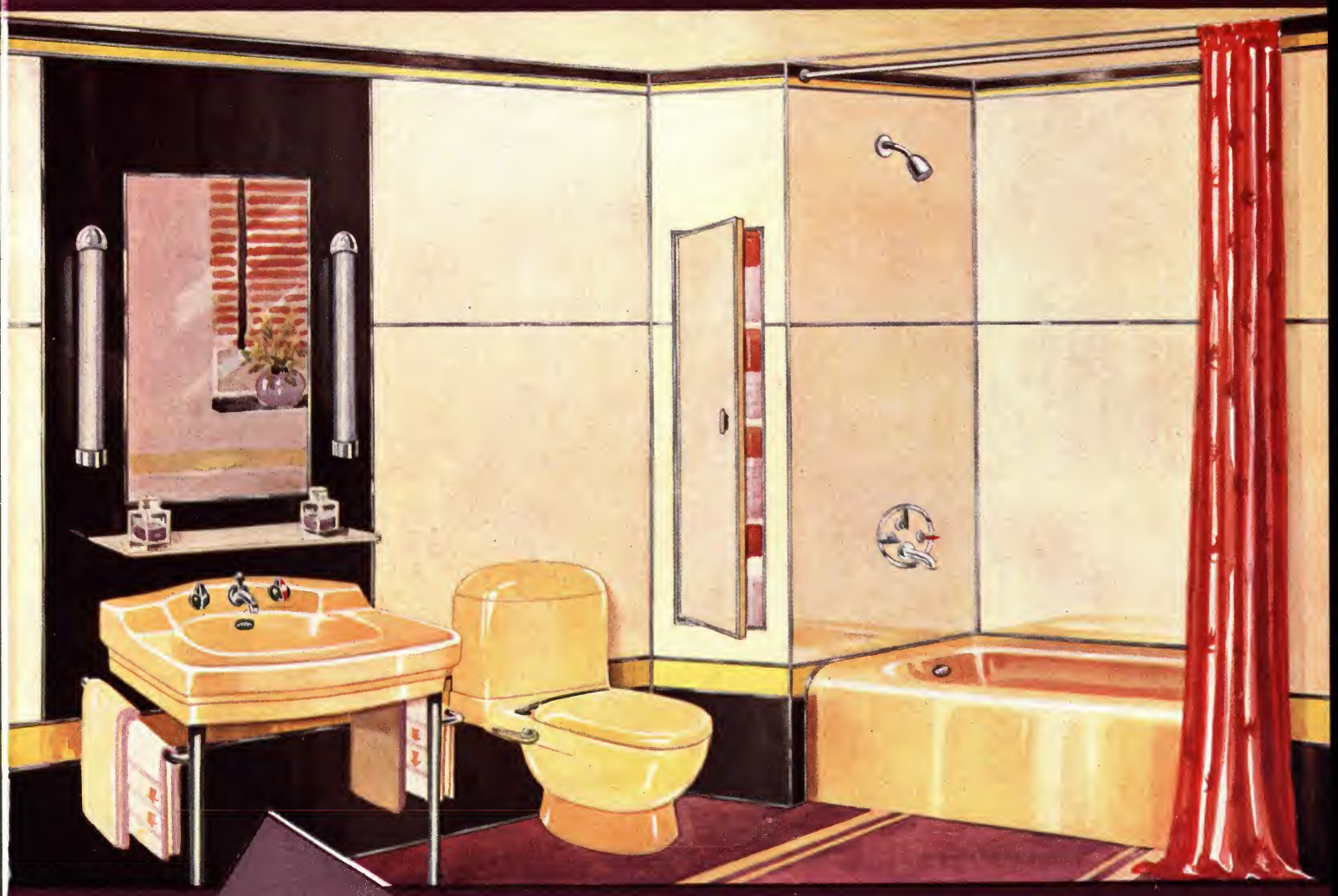
K&M Linabestos is a fire-resisting asbestos-cement board, laminated under pressure, resulting in a rigid, uniform-thick, smooth-surfaced sheet. It has a natural light buff color. Linabestos can be painted or grained for architectural effects, but it must be sized before painting unless a cement paint is used.

Standard Sizes and Weights of K&M Linabestos

	Thickness	Standard Sizes	Wt. per sq. ft. Uncrated	Sheets per Crate
Plain	3/16"	48" x 96"	1.87 lbs.	14
Plain	3/16"	48" x 48"	1.87 lbs.	20
Plain	1/4"	48" x 96"	2.5 lbs.	10
Plain	1/4"	48" x 48"	2.5 lbs.	16
Plain	3/8"	48" x 96"	3.75 lbs.	7
Plain	3/8"	48" x 48"	3.75 lbs.	11
Scored	3/16"	48" x 48"	1.87 lbs.	20

Linabestos is vermin-proof and will not deteriorate, rot or rust. It is used as a fire-stop partition and as an unburnable lining for ceilings and walls. An excellent replacement for wood, plaster, or sheet metal for low cost exterior or interior sheathing for homes, industrial plants, garages and public buildings. K&M Linabestos can be applied by carpenters. It can be drilled, punched, fastened with nails and screws and sawed with a hand saw. Linabestos Battens are furnished standard in sizes 2 in., 3 in., and 4 in. width, 3/8 in. thick and 4 ft. or 8 ft. long.

Linabestos is available in two types: Plain and Scored. The scored sheets are supplied in one pattern which is 4 in. by 4 in. square block scoring to resemble tile effect, in standard size 48 in. by 48 in. only. The plain sheets are furnished in different sizes and thicknesses as shown in table above.



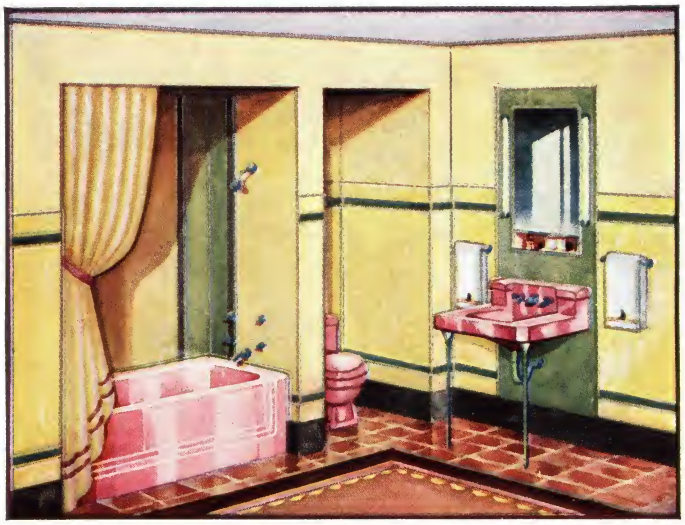
MARSH

Wonder Walls

for BEAUTIFUL INTERIORS

COCKTAIL LOUNGE *in white and Royal Blue Marlite as shown at the Great Lakes Exposition, Cleveland, Ohio. Mark Seibert, designer*

BATHROOM *walls in Canary Yellow and Forest Green, as conceived by the Marsh Department of Design, illustrate one of many beautiful effects possible by the use of Marlite.*



MARSH WONDER WALLS have smooth polished surfaces which reflect beauty.

These smooth surfaces resist acids and alkalies, insuring a stain proof wall that will endure for many years. The very nature of this hard polished surface simplifies cleaning and provides a sanitary wall. The many colors and patterns of Marlite give unlimited possibilities for decorative schemes. This wide selection of color, together with the versatility of the material itself, makes interior decoration a pleasure. . . These qualities impart to any room, in which Marsh Wonder Walls are used, a new atmosphere that is comfortable and livable.

NIGHT CLUB *Jack Dempsey Restaurant, New York City. Eastman Decorators, Louis Brooks, Arch.*

KITCHEN *Walls like these of Marlite are clean and sanitary.*

LOBBY *Wayside Inn, West Springfield, Mass. Designed by W. E. Robinson Patrick.*

MARLITE PLAIN-COLORS...

Registered U. S. Patent Office

Marlite Plain-Color holds a magic secret which is revealed in combinations of these warm, soft colors. The bathroom illustrated on the cover exemplifies the artistic results that may be expected by a plain-color treatment. Here is created an atmosphere of spaciousness and complete color harmony of walls with accessories at an attractive cost. . . . Marlite is meeting with unusual acclaim among architects and designers who influence the modern trends. Large sheets in a wide range of plain-colors (shown on the back cover) provide an infinite variety of effects that will conform with contemporary styles. You will be proud of rooms which have walls of Marlite, not only for the beauty, but for the time saved in keeping them clean as well. It is wise to enjoy these comforts of "new-room complexion" because they increase the value of your property many times the investment required. . . These features have built up records of dependability for Marlite as an effective decorative medium in all fields of merchandising. Marsh Presdwood Mouldings include members for cap, base and dividers finished in plain-colors to match. . . See page 11 for complete list of Marsh Mouldings.

USES . . . Marlite Plain-Color is highly desirable for wall treatments in bathrooms, lavatories, kitchens, breakfast rooms, cocktail lounges, night clubs, reception lobbies, hospitals, food stores, dairy stores, and displays. For equipment such as grocery counters, soda fountains and back bars.

COLORS . . . . White, lemon yellow, skyblue, ivory, robin-egg blue, G. E. yellow, dove gray, Pompeian red, apple green, royal blue, burnt umber, cream, jade green, canary yellow, orchid, peach, pheasant green, cafe au lait, Mediterranean blue, Persian red, forest green, black, gold, silver, copper and bronze.

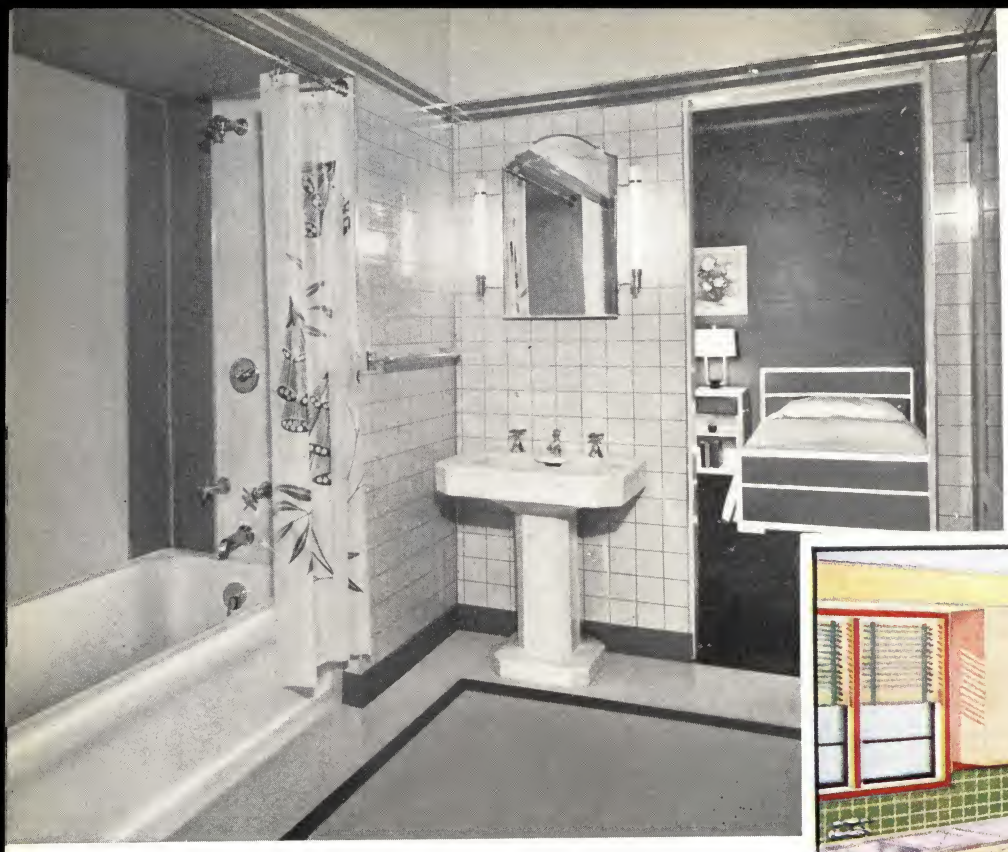
SIZES . . . . Marlite Plain-Color comes in large flat sheets $\frac{5}{32}$" thick by 4' wide by 4', 5', 6', 7', 8', 10' and 12' long. It is also available in Marsh Bend Board in sizes 2'x4', 4'x4' and 4'x6'. These sheets can be easily cut to size with regular carpenter's tools. See Specifications on page 10.

Marsh Wall Products, Inc., reserves the right to change the standard colors or patterns at any time.

HOSPITAL *Corridor walls and doors covered with Marlite are sanitary.*

FOOD STORES *Pender Grocery Co., Greensboro, N. C. Marlite designs by W. G. Bursnall.*

DAIRY STORES *Union News Milk Bar Radio City, New York.*



BATHROOM *walls in a combination of tile-pattern and plain-color, (plain—color is recommended for shower areas) designed by Grover Daley for the Texas Centennial at Dallas, Texas.*

KITCHENS ... *Utility and beauty characterize this kitchen in which is shown a practical combination of Marlite Tile-Pattern and Plain-Color as conceived by the Marsh Department of Design.*

... MARSH WONDER WALLS ...

are practical as well as beautiful. The various materials come in large sheets that can be easily applied over existing walls by a competent carpenter. It is a comparatively simple task to fit these large sheets with regular carpenter tools. The usual litter and disorder of remodeling will be completely avoided. There is nothing "tricky" about these installations. They are representative of the day-by-day installations made by Marsh Wonder Wall dealers from coast to coast. To benefit fully from this outstanding material, consult your nearest dealer for complete information or write direct to the factory.

DAIRY STORE *John Ragusa Cleveland, Ohio*

DRUG STORE *Standard Drug Company Cleveland, Ohio*

FOOD STORE *The Great A. & P. Tea Co. Charleston, West Virginia*

MARLITE TILE-PATTERNS...

Registered U. S. Patent Office

Marlite Tile-Pattern is the ideal material for sanitary walls where tile-effects are desired. It is impervious to ordinary acids and fruit juice stains. The smooth surface makes it easy to keep clean and long retain its original glistening luster. Marlite Tile-Pattern surface is an improvement which has been eagerly welcomed because it provides striking new smartness for wall decoration. Walls with this glass-like luster, once an expensive luxury, are now possible in homes of very modest cost. Installations such as illustrated have won for Marlite Tile-Pattern an overwhelming vote of confidence from home owners and merchants everywhere because of its economy in application and maintenance. There is practically no limit to the number of decorative effects which may be created by using combinations of plain-colors and tile-patterns. The bathroom shown on the opposite page is a vivid example of a practical Marlite installation. Here Marlite Plain-Color has been used for the shower area and as a decorative feature strip, while the Marlite Tile-Pattern is used for the other walls.

Note: Marlite Tile-Patterns were formerly identified, advertised and sold as Marshtile.

USES

.... Marlite Tile-Pattern has a wide variety of uses, such as in kitchens, bathrooms, lavatories, breakfast rooms, dairy stores, food stores, drug stores, barber shops, lubritoriums, funeral homes, bake shops and restaurants. Also for counters, meat cases and meat coolers. *Do not use Tile-Pattern in shower areas.*

COLORS

....

Color	Score Color
Robin-egg Bl.	Ivory
Dove Gray	Ivory
Orchid	Gray
Orchid	Ivory
Mediter. Blue	Gray
Skyblue	White
Pheas. Green	Ivory
Jade Green	Forest Gr.
Jade Green	Ivory
Lemon Yellow	White
Lemon Yellow	Black
Royal Blue	White

Color	Score Color
White	Gray
White	Black
White	Per. Red
White	Pheas.Gr.
Ivory	Gray
Ivory	Black
Cream	Gray
Cream	White
Cream	Apple Gr.
Peach	Ivory
Black	Ivory
Black	White
Black	Gray

All other colors on Special Order.

SIZES

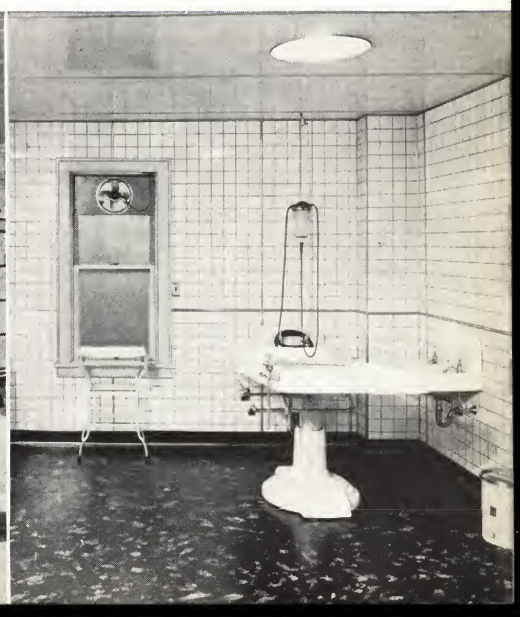
. . . . Marlite Tile-Pattern comes in large flat sheets $\frac{5}{32}$″ thick by 4′ wide by 4′, 5′, 6′, 7′ and 8′ long. Standard tile-markings are 4″ x 4″. Sheets 10′ and 12′ long, and tile-markings 8″ x 8″, 8″ x 12″, 12″ x 12″, and 16″ x 16″ may be had on special order. These sheets can be easily cut with regular carpenter tools.

Marsh Wall Products, Inc., reserves the right to change the standard colors or patterns at any time.

LUBRITORIUM *Gulf Refining Co. Columbus, Ohio*

BARBER SHOP *Mahood Barber Shop Ithaca, New York*

MORTUARY *Preparation room in Funeral Home, Newark, Ohio.*



RECEPTION LOBBY *of the Way-side Inn at West Springfield, Mass., has horizontal paneling of Marlite Italian Olive Wood-Pattern as designed by W. E. Robinson Patrick. These wood-patterns are available in sheets as large as 4' x 12', a feature which is welcomed by contemporary designers. The wood graining is reproduced photographically in true colors, eliminating the expense and inconvenience of finishing.*

OFFICE *... Here is a very attractive application of Marlite Wood-Patterns. The panels are backed with insulation board which is applied direct to the studding. The joints are concealed with Marsh Snap-on Stainless Steel Mouldings. Mark Seibert, designer.*

AMERICAN Figured WALNUT

SATINWOOD

ITALIAN OLIVE

ENGLISH HAREW

MARLITE WOOD-PATTERNS...

Registered U. S. Patent Office

Marlite Wood-Pattern, the newest of the Marsh Wonder Wall materials, provides the richness of rare wood grains reproduced in natural colors. Novel finishes come and go, but the age-old charm of beautiful wood has delighted us for centuries and still holds us enthralled. Wood-Pattern Marlite, being prefinished ready for use, is identical in physical properties with other Marsh Wonder Wall materials. It is resistant to moisture, acids and alkalies. It is easily kept clean with a damp cloth. The large sheets of Marlite Wood-Patterns make possible an endless variety of treatments for walls. The flexibility of Marsh Bend Board is a welcome achievement for arches, bends and curves. Creative designers are quick to recognize the value of this feature in executing their ideas. It gives them a new freedom of form. Marsh Presdwood Mouldings are made to match all wood-patterns. See page 11 for complete list of Marsh Mouldings.

Note: Marlite Wood-Patterns were formerly identified, advertised and sold as Marshwood.

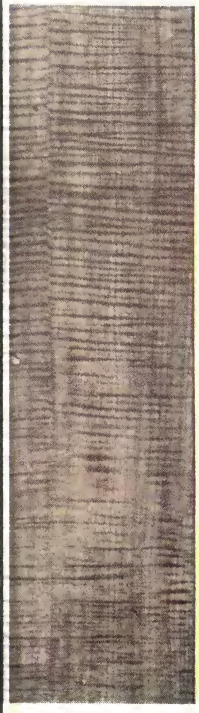
USES . . . . Marlite Wood-Pattern is particularly effective in commercial interiors, such as offices of all kinds, night clubs, bars, back bars, elevator cabs, hotel dining rooms, beauty parlors, and displays. Also in homes for libraries dining rooms, dens, kitchens and living rooms.

PATTERNS . . . . Great care has been exercised in selecting the original veneers from which Marlite Wood-Patterns have been reproduced. The sections shown are representative of the various wood-patterns. The Italian Olive Pattern is quarter matched.

SIZES. . . . The smallest sheet is 32″ x 48″, with grain running the 48″ way. Larger panels available in 32″ x 96″ and 32″ x 144″, grain running the 96″ and 144″ ways respectively, also, 4′ x 8′ and 4′ x 12′ with the grain running the 4′ way. Bend Board is available in 2′x4′, 4′x4′ and 4′x6′ sheets.

Marsh Wall Products, Inc., reserves the right to change the standard colors or patterns at any time.

ID



FRENCH WALNUT

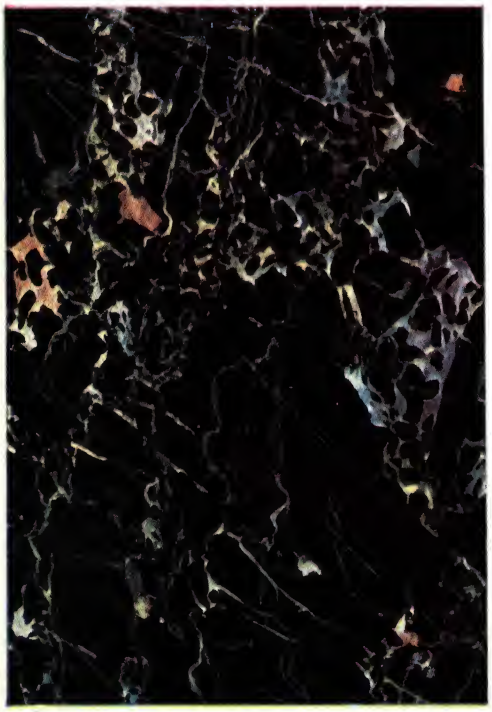
MAHOGANY

AMERICAN Straight Grain WALNUT

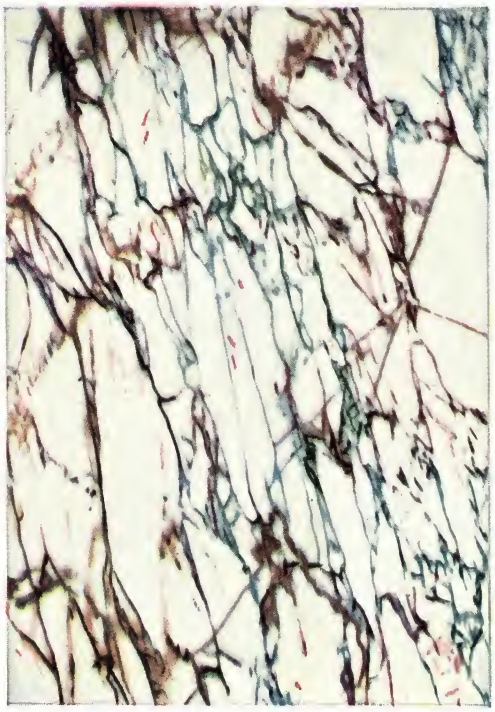
CORRIDORS *in buildings that need renovizing will have an air of dignity when Marlite Marble-Patterns are used to recondition the walls. The corridor above of the Pan-American Life Insurance Co., Arrot Building, Pittsburgh, Pa., was remodeled by applying Marlite Marble-Pattern over the existing plaster walls. The walls of their executive offices were reconditioned with Marlite Wood-Patterns. Paul Richard Scheuneman, the architect for the above work, and many other prominent architects are recognizing the need for these new materials in the rehabilitation of obsolete buildings.*

DISPLAY . . . *Men who build displays welcome the use of Marsh Bend Board for curved surfaces. All finishes are available in this new, flexible board which has a durable glazed surface. Display shown at Great Lakes Exposition*

BLACK AND GOLD



SKYROS



VERDI ANTIQUE

MARLITE MARBLE-PATTERNS...

Registered U. S. Patent Office

Marlite Marble-Patterns are faithful reproductions of rare imported marble. The glossy finish is non-porous, extremely hard and smooth, unaffected by the chemical action of soaps and ordinary cleaning acids. There is a dignity attached to marble that few other materials can match. Marlite Marble-Patterns, recreated with flawless fidelity, express this dignity. This is appreciated instantly by the keen observer. These marble-patterns possess all the warmth and life, all the elusive charm of the most beautiful original specimens obtainable. This material can be applied over plaster or other wall surfaces by any good carpenter. The low cost of Marlite Marble-Patterns is easily appreciated when material and labor costs are compared. The Marlite Marble-Pattern used on the columns shown on the opposite page is Marsh Bend Board, a recent development for arches, bends and curves. This new feature is welcomed by designers, as it gives them new freedom of expression in form.

Note: Marlite Marble-Patterns were formerly identified, advertised and sold as Marshmarble.

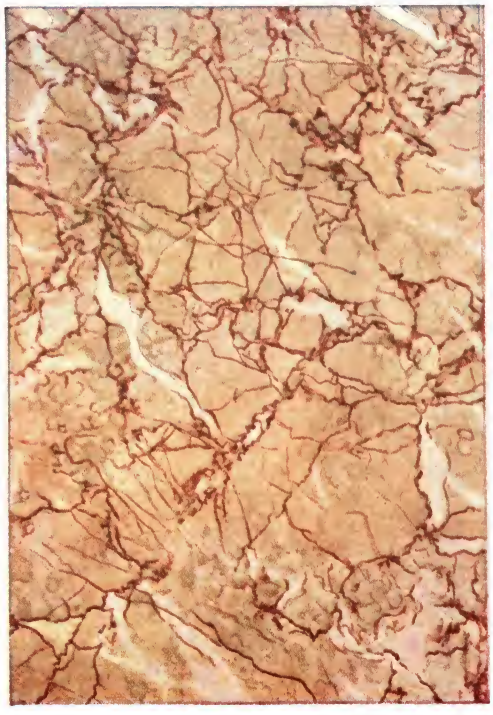
USES . . . . Marlite Marble-Pattern is ideal for hotel lobbies, theater foyers, building corridors, department stores, churches, altars, banks, hospitals, displays, soda fountains, dairy bars, columns, powder rooms, vestibules and bathrooms.

PATTERNS . . . . The original slabs of marble from which Marlite Marble-Patterns have been reproduced were carefully selected from rare imported marble. The sections shown are representative of the various marble-patterns which are reproduced in nature's beautiful colors.

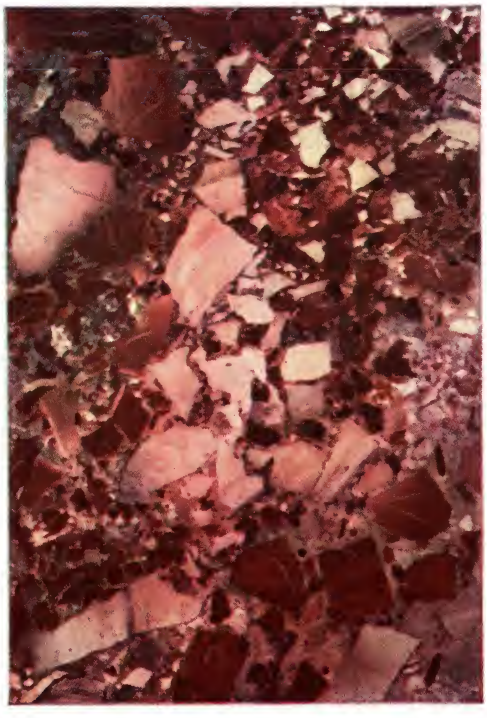
SIZES. . . . The smallest sheet is 32″ x 48″, with grain running the 48′ way. Larger panels available in 32″ x 96″ and 32″ x 144″, grain running the 96″ and 144″ ways respectively, also, 4′ x 8′ and 4′ x 12′ with the grain running the 4′ way. Bend Board is available in 2′x4′, 4′x4′ and 4′x6′ sheets.

Marsh Wall Products, Inc., reserves the right to change the standard colors or patterns at any time.

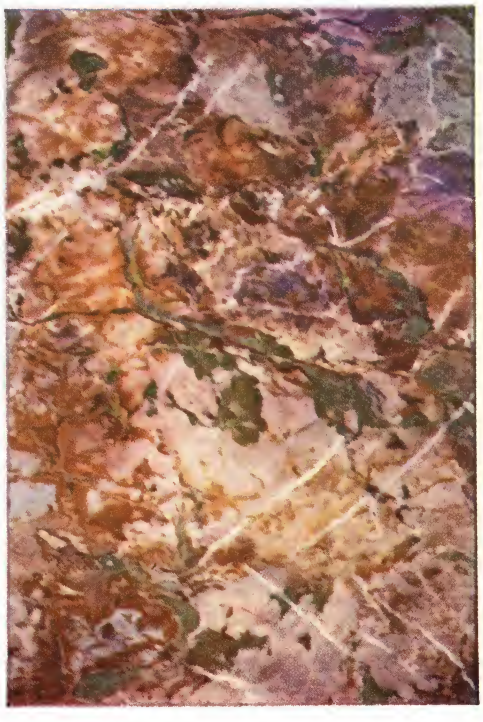
ROSE DE BRIGNOLES



BRECHE ROSE



JAUNE BENOU



SPECIFICATIONS... On all walls as indicated on the plans and/or as called for in the specifications supply Marlite wall covering as manufactured by the Marsh Wall Products, Inc., Dover, Ohio.

MATERIAL... ***Wall covering:*** The wall covering shall be Marlite (specify color or pattern desired). Basically this product is treated Tempered Presdwood to which a hard but flexible synthetic glazed surface is permanently integrated. ***Finish:*** The highly glazed surface is beautifully finished by an exclusive treatment which completely seals the pores so that moisture and dirt cannot penetrate. Acids, alkalies and non-abrasive cleaning compounds are repelled, insuring a stain-proof, easy-to-clean surface which retains its beautiful appearance for years. It is difficult to mar even when struck by a hammer. ***Adhesive:*** The adhesive shall be Marsh Mastic as manufactured by the Marsh Wall Products Company especially for the application of Marlite.

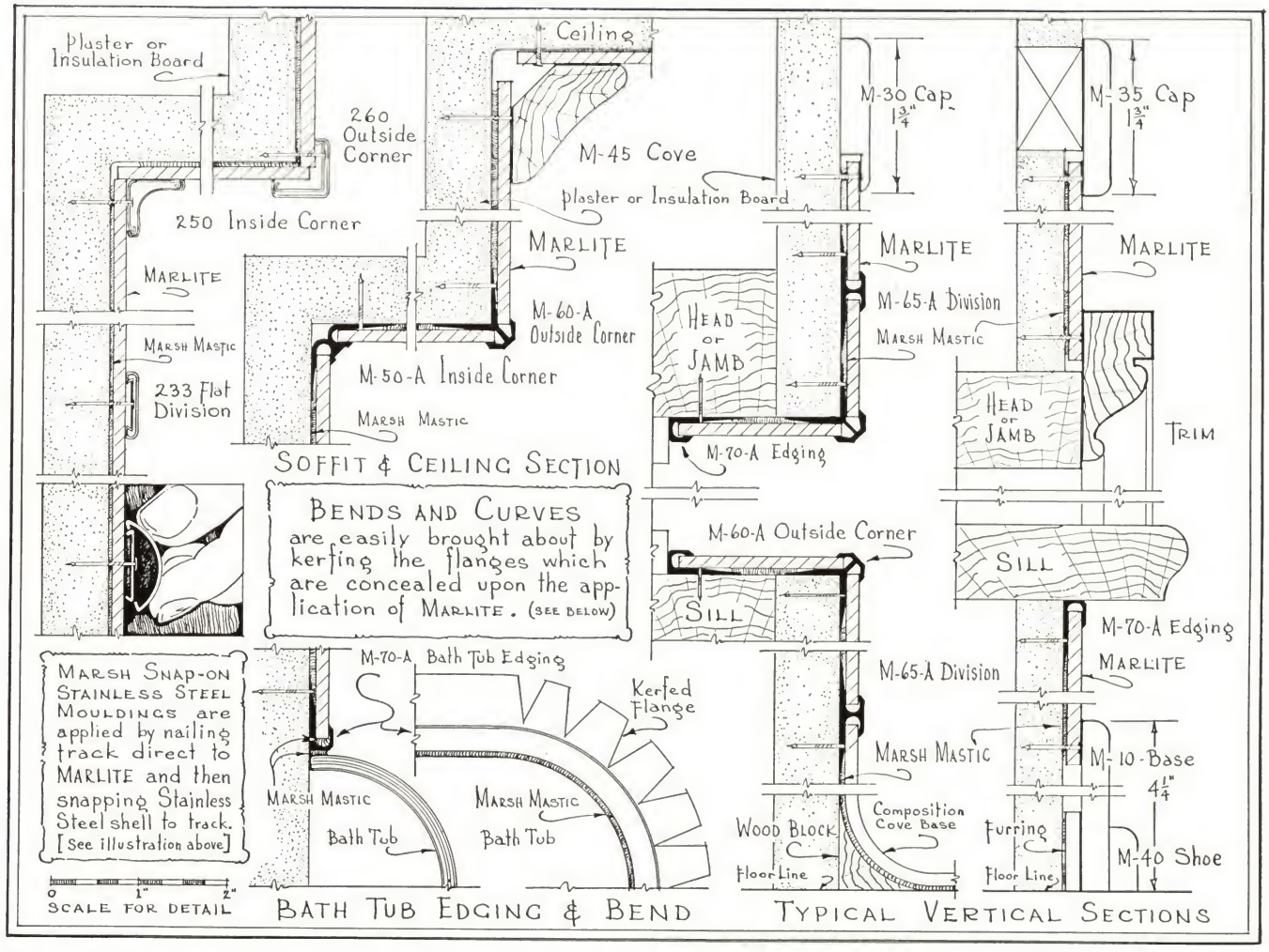
NEW WALLS... ***Plaster walls:*** Rough plaster or white coated plaster walls shall be provided to receive Marlite. Plaster shall be thoroughly dry before Marlite is applied. ***Wall board:*** Masonite insulation board, plaster board, plywood, or similar wall board material shall be erected on rigid studding to provide a straight wall for the erection of Marlite. ***General conditions:*** Walls that are provided to receive Marlite shall be dry and constructed in such manner that there will be no seepage of moisture through walls from the back to the surface.

OLD WALLS... ***Preparation of old plaster walls:*** Loose, scaly paint, cold water paint or wall paper shall be removed. Gloss painted and smooth enameled surfaces are satisfactory for application of Marlite. Walls shall be free from moisture.

APPLICATION... Marlite shall be installed according to instructions furnished by the manufacturer.

COMPLETE INSTALLATION INSTRUCTIONS ACCOMPANY EACH SHIPMENT

DETAIL OF MARLITE AND MARSH MOULDINGS

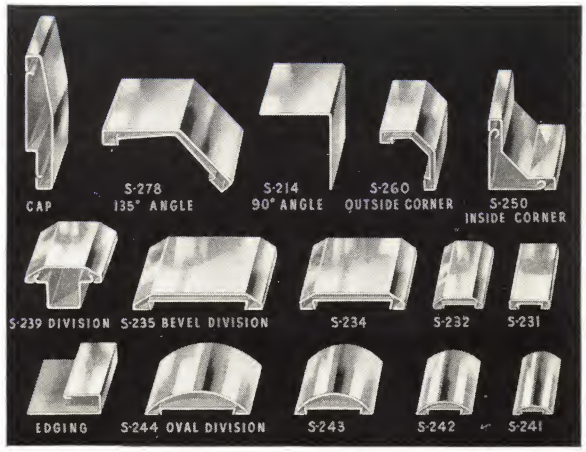


Manufactured by

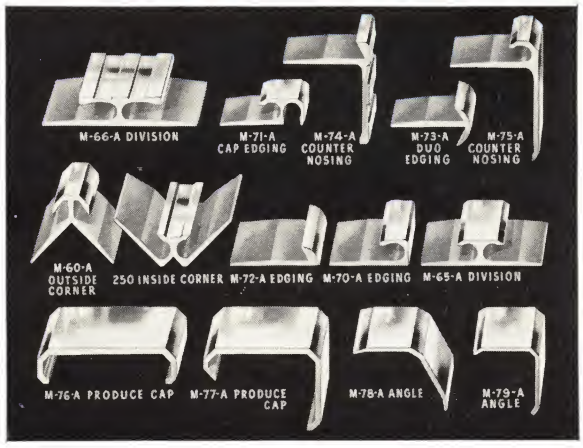
MARSH WALL PRODUCTS, INC., DOVER, OHIO

MARSH MOULDINGS

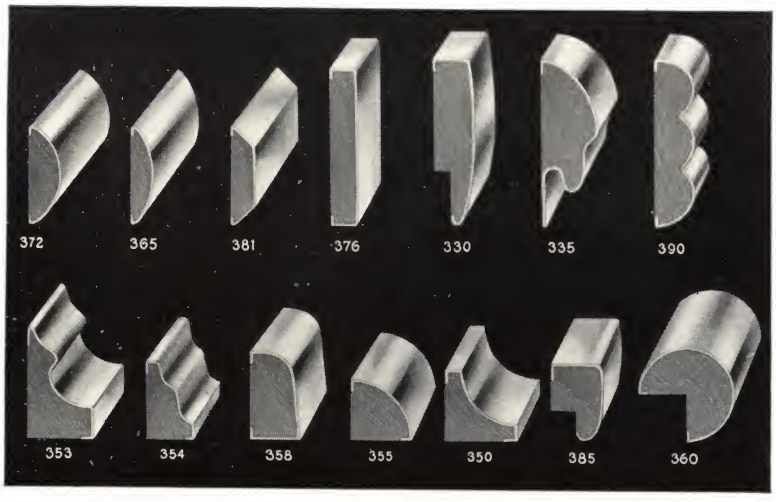
Marsh Wonder Wall materials are supplemented with a complete line of mouldings that will fill every decorative need. Somewhere in this complete line will be found a moulding member to fill your requirement, whether it be straight lines, curves or angles. . . . Snap-on stainless steel, extruded white alloy, chromium plated rolled zinc, chromium plated kalamein and mouldings in heavy presdwood to match all Marlite colors and patterns. Marshtag Moulding for holding price tags or cards is unsurpassed as an inconspicuous decorative medium for customers that demand visible pricing of merchandise. Marsh Mouldings meet specific requirements by virtue of the careful planning which precedes every Marsh product. All mouldings are designed to member into each other. Skilled craftsmanship acquired through 23 years of manufacturing makes evident even to the critical eye the high quality maintained in this complete line of mouldings. By writing direct to the factory you will receive a complete Marsh Moulding catalogue.



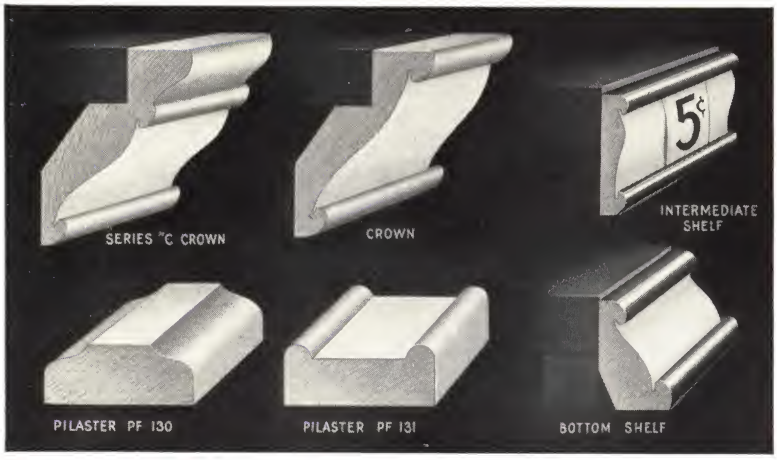
MARSH SNAP-ON STAINLESS STEEL



MARSH EXTRUDED WHITE ALLOY

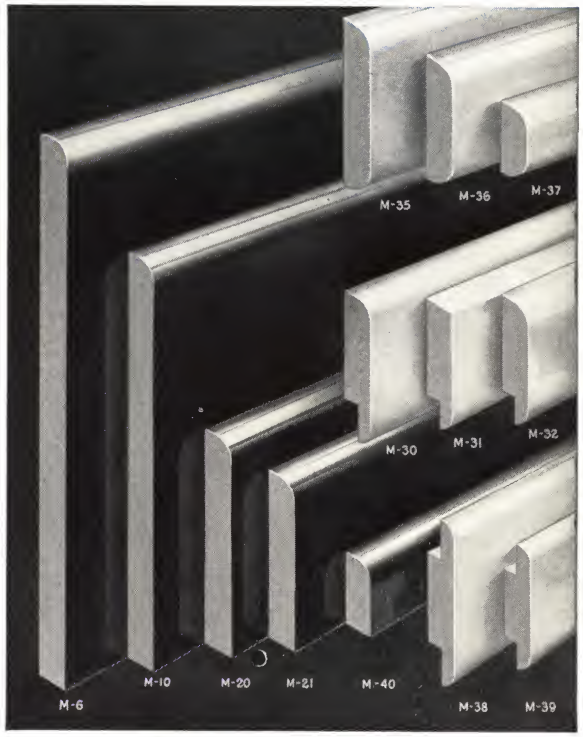


MARSH KALAMEIN



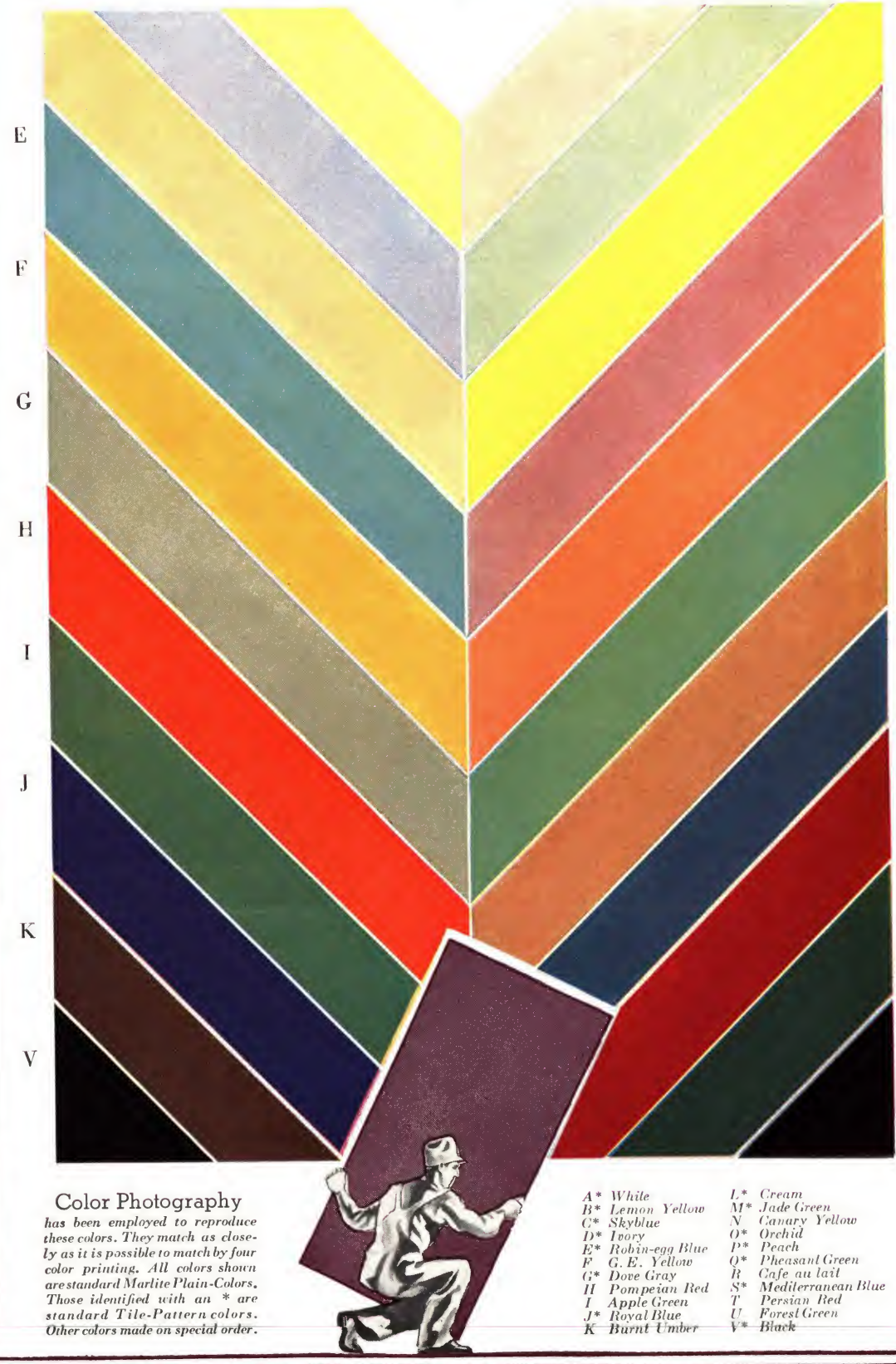
MARSHTAG MOULDINGS

MOULDINGS ARE ILLUSTRATED APPROXIMATELY HALF ACTUAL SIZE



MARSH PRESDWOOD MOULDINGS

MARSH *Wonder Wall* COLORS



Color Photography

*has been employed to reproduce these colors. They match as closely as it is possible to match by four color printing. All colors shown are standard Marlite Plain-Colors. Those identified with an * are standard Tile-Pattern colors. Other colors made on special order.*

A White*
B Lemon Yellow*
C Skyblue*
D Ivory*
E Robin-egg Blue*
F G.E. Yellow
G Dove Gray*
H Pompeian Red
I Apple Green
J Royal Blue*
K Burnt Umber
L Cream*
M Jade Green*
N Canary Yellow
O Orchid*
P Peach*
Q Pheasant Green*
R Cafe au lait
S Mediterranean Blue*
T Persian Red
U Forest Green
V Black*

MARSH WALL PRODUCTS, INC. DOVER, OHIO

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https://archive.org/details/buildingtechnologyheritagelibrary

WESTINGHOUSE ELECTRIC & MFG. CO.

EAST PITTSBURGH, PA.

For Branch Offices, see our Lighting Pages
For References to other Products, see File Index.

The walls of this handsome office are paneled in attractive bisque Micarta. The trim is Micarta in straight grain walnut.

★

MICARTA

THE MODERN DECORATIVE MATERIAL

★ ★ ★

Decorative Micarta Plate—This is a laminated, hot molded product . . . dense, strong and hard . . . specially developed for use as a decorative veneer or panel. It supplies a finish that is extremely durable and will not easily scratch, or dent. Available in a wide variety of plain colors and distinctive patterns, it can also be inlaid with brilliantly colored metals to produce striking decorative effects.

In Restaurants, Dining Rooms, Tea Rooms—Wherever tables and counters are used—Micarta is an ideal material. Durable, attractive color schemes, plain or decorative patterns—these are but a few of the uses for which Micarta is specially fitted. Wall paneling of Micarta is ideal not only from the standpoint of utility but for its lasting beauty.

Taverns, Bar Rooms and Grills—Here Micarta is particularly desirable because its beautiful finish is not affected by alcoholic liquors. In addition to its use for table and bar tops, Micarta provides striking decorative effects for bar fronts and back bars.

In Stores or Offices—Office desks and counter tops are greatly improved with a top surface of Micarta. The writing or working surface equals that of plate glass without reflected glare and chance of breakage. Decorative Micarta makes excellent partitions and wainscoting . . . it is durable, attractive, and fire resisting.

In Theatre Lobbies and Foyers of Public Buildings—Lobbies and foyers paneled in Micarta are attractive, durable and easily kept clean. Baseboards of Micarta in lobbies where surging crowds are never careful are found to be ideal from the standpoint of durability, attractiveness and upkeep.

In Hotels—Micarta is economical and practical as well as pleasingly distinctive. Plate glass tops on dressers, tables and telephone stands are broken frequently. Micarta, without the danger of breakage, provides the desired decorative effects and is highly resistant to spilled liquids and burning cigarettes. Walls of Micarta are desirable . . . attractive, easy to clean, and virtually indestructible. For counter and desk tops Micarta makes a smooth, hard writing surface, highly resistant to dents and scratches.

In Hospitals—Here, more than in any other field, Micarta's sanitary, non-absorbing surface and its resistance to chemicals, are very important. Micarta is a protection as well as a decorative finish.

In Ocean Liners—For marine service, Micarta's resistance to fire and moist salt air make it a preferred finishing material. Paneling in stateroom or salon is

WESTINGHOUSE ELECTRIC & MFG. COMPANY

MICARTA

WOOD DESIGNS

(ONE-THIRD ACTUAL SIZE)

845
CURLY MAPLE

838
WALNUT LIGHT BURL

847
WHITE OAK

804
WALNUT DARK BURL

830
WALNUT LIGHT
STRAIGHT GRAIN

801
MAHOGANY DARK RED
STRAIGHT GRAIN

835
WALNUT DARK SEMI-
STRAIGHT GRAIN

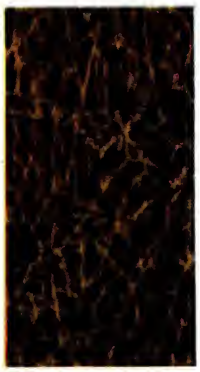
805
WALNUT DARK
STRAIGHT GRAIN

843
MAHOGANY DARK BROWN
STRAIGHT GRAIN

MARBLE DESIGNS

(ONE-THIRD ACTUAL SIZE)

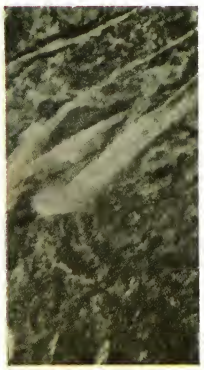
834
BLACK AND GOLD



829
GOLD WEB

860
BIANCO CHIARO

858
CARDIFF GREEN



857
VERDI ANTIQUE

874
BLACK AND GREEN

WESTINGHOUSE ELECTRIC & MFG. COMPANY

MICARTA

SOLID COLORS

877
DEEP ANTWERP BLUE

865
DOVE

849
CADMIUM YELLOW

818
CRIMSON

868
CHINESE RED

820
DEEP GREEN

856
WHITE

869
SURF GREEN

866
ALLEGHENY GREEN

832
MEDIUM GREEN

862
DARK BROWN

828
VANDYKE BROWN

864
BISQUE

867
SAHARA

836
BLACK

more durable in Micarta; counters and tables are easily cleaned and they wear better when topped with this material.

In Homes—Micarta provides new beauty and a new standard of service in practically every room of the home. Particularly for walls in the bathroom and the kitchen, Micarta offers special advantages. Micarta retains its bright, gleaming finish and is very easily cleaned. Micarta serves admirably also in the breakfast nook, for kitchen work surfaces, window ledging, etc.

Micarta serves a triple purpose in this kitchen. It is used on the ceiling, as wall paneling, and as work surfaces. Micarta's easily-cleaned, gleaming finish makes it particularly suited to these applications.

Micarta paneled bathroom

★ ★ ★

Micarta wainscoting can be installed in the same manner as other composition paneling. We recommend that all types of wall work in Micarta paneling be installed with metal or wood moldings covering all joints. The combination of metal molding and Micarta is smart, attractive and durable, making it an ideal combination for remodeling and rehabilitation work.

TYPES OF MICARTA

Combination Micarta panels of various thicknesses are available; Micarta-Plywood, Micarta-Prestwood, Micarta-Asbestos and Micarta-Wemcore. These panels consist of Micarta molded or fabricated to the core materials as indicated.

Micarta-Wemcore has a special core material of resinous lamination, to which Micarta surfacing is applied and the whole molded into one solid, dense panel.

Micarta-Asbestos is recommended especially for exterior applications. Under special circumstances, Micarta-Wemcore can be used for exterior work.

For the veneering of furniture and for the manufacture of table tops, counter tops, bar tops and fronts, $\frac{1}{16}$ in. solid Micarta sheets are recommended. These sheets may be had in $\frac{3}{32}$ and $\frac{1}{8}$ in. thicknesses if required. All Micarta plate and all types of paneling are manufactured in standard-size sheets 36 in. x 72 in., 48 in. x 48 in., 48 in. x 96 in., and 24 in. x 96 in.

MICARTA MANUAL FOR ARCHITECTS

Westinghouse has compiled an attractive and instructive manual on Micarta which will be sent to architects on request. In addition to descriptions of various applications there are detail drawings and specifications.

In writing for a copy of this manual, please ask for Booklet 2117.

The Micarta mantelpiece provides an extremely brilliant decorative note to this living room

Micarta forms the bar paneling and table tops in this famous bar.

DECORATIVE MICARTA DISTRIBUTORS

CHICAGO, ILLINOIS	HARBOR PLYWOOD CORP.
CLEVELAND, OHIO	DAVIS PLYWOOD CORP.
LOS ANGELES, CALIF.	CONTINENTAL SPECIALTY CO.
MILWAUKEE, WISCONSIN	GEO. L. WAETJEN AND CO.
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DETROIT, MICHIGAN	U. S. PLYWOOD CO., INC.
OAKLAND, CALIF.	PLASTIFORM PRODUCTS, INC.
SALT LAKE CITY, UTAH	MORRISON MERRILL AND CO.
SEATTLE, WASHINGTON	RALPH L. EARNEST CO.
ST. LOUIS, MISSOURI	FRY-FULTON LUMBER CO.
ATLANTA, GEORGIA	HARBOR PLYWOOD CO.

The RUBEROID Co.

Manufacturers of "Newtile" and "Newmarble" Asbestos Panels, Simulating Tiling and Marble in Sheet Form

EXECUTIVE OFFICES
500 Fifth Avenue, NEW YORK, N. Y.
DIVISIONAL OFFICES
NEW YORK CHICAGO BOSTON (MILLIS) ERIE BALTIMORE MOBILE

PRODUCTS

"Newtile" Asbestos Tiling in sheet form.

"Newmarble" Asbestos Panels simulating marble.

For other Asbestos-cement products made by The Ruberoid Co., see File Index.

IMPROVED "NEWTILE"

Wherever walls can be tiled—in every home or business building—architects and builders are specifying the use of "Newtile" for smart ceramic effects. Its gleaming beauty and its long-wearing, water- and fire-resisting qualities make it an eminently satisfactory product, particularly where economy is desirable.

The "Newtile" base is a strong, rigid sheet of asbestos. This is finished with a hard, highly polished surface closely resembling ceramic tile. Scoring at 4-in. intervals perfectly reproduces the effect of 4-in. square tiles even to the appearance of natural mortar joints.

It is easy to saw, plane and drill. Nails may be driven without fear of fracture.

The surface of "Newtile" is non-absorbent and repels dirt so completely that an occasional wiping with a damp cloth or washing with soap and water will restore its original brilliant lustre at once.

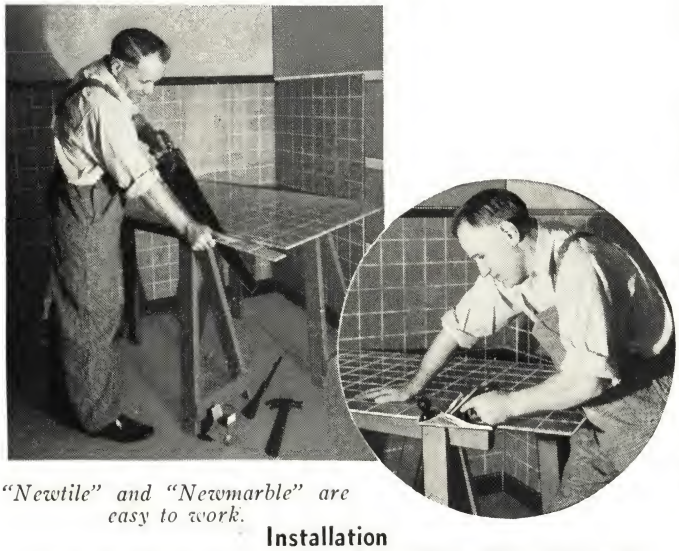
Colors

"Newtile" is furnished in white and three pastel shades—green, blue and cream; also black. These colors were selected for their ability to blend with practically any color scheme. "Newtile" base and cap are also made in the same colors. "Newtile" is available with scorelines in natural gray or painted to give contrast with the tile.

How Furnished

"Newtile" is furnished in sheets, base and cap in the following sizes:

Sheets: 32 x 48 in., $\frac{3}{16}$ in. thick.
Base: 4 or 6 in. wide, 48 in. long, $\frac{3}{8}$ in. thick.
Cap: 2 in. wide, 48 in. long, $\frac{3}{8}$ in. thick.



"Newtile" and "Newmarble" are easy to work.

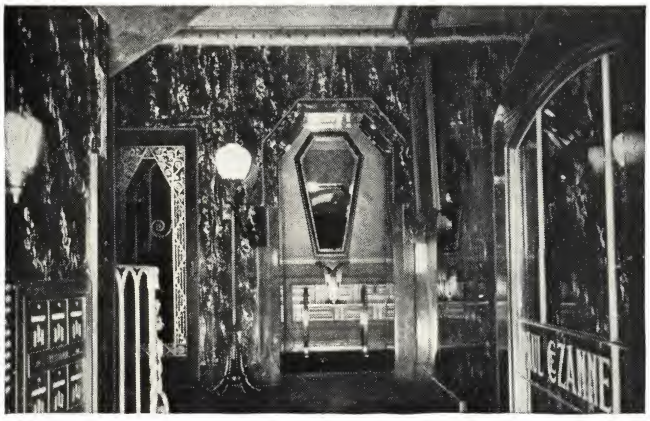
Installation

For instructions in cutting and installing "Newtile" write any office of the The Ruberoid Co. Full application details are packed in every crate.

61J

"NEWMARBLE"

"Newmarble" is made from asbestos and cement in panel form with a beautiful and lustrous finish that simulates marble. It is fire- and weather-resisting; durable, sanitary, easy to keep clean and may be quickly installed by any mechanic. Its lovely, colorful surface; depth of finish; long life and surprising economy qualify it for the many purposes where the use of marble is indicated. Light in weight, approximately 2 lbs. to the sq. ft., it may be used where real marble would not be desirable on account of weight and bulk.



Attractive Foyer Cezanne Apartments, Kansas City, Mo.—Furnished in Black and Gold "Newmarble"

Uses

Architects have found an almost unlimited field of adaptations for "Newmarble." A few of the classes of installations rapidly gaining favor are:

(1) Apartment house foyers. (2) Theatre lobbies. (3) Office building lobbies and hallways. (4) Hospitals. (5) Department stores. (6) Store fronts.

Colors

"Newmarble" is made in the following attractive colors: Black and Gold, Light Italian, French Black and White, Verde Antique (Green), African Black and White, Belgian Black. For interior use only: Spanish Rose and Chinese Red.

How Furnished

"Newmarble" Standard Panels—regularly furnished in panels, size 32x48 in., $\frac{3}{16}$ in. thick.

"Newmarble" Trim

For effective results "Newmarble" trim should be used wherever trim is necessary. Striking and harmonious effects can be produced by the use of trim different in color from the panels.

Cap moulding and base are made in all "Newmarble" finishes, the standard stock widths being 4 and 6 in., respectively. One edge rabbetted to receive the panels. Length 48 in. Other widths up to 12 in. can be procured on special order.

Installation

For instructions in cutting and installing "Newmarble," write any office of The Ruberoid Co. Full application details are packed in every crate.

AMES METAL MOULDING CO., INC.

Manufacturers of Metal Mouldings and Frames, Store Fronts and Doors

225-229 East 144th Street, NEW YORK, N. Y.

TELEPHONE: MElrose 5-0973

Products

Metal Mouldings for the Building and Decorative Trades.

Metal covered mouldings for interior and exterior use, in bright chrome, satin finish chrome, brass, copper, aluminum, stainless steel, and other metals.

Foil mouldings.

Frames and easels constructed of metal covered moulding.

Metal Store Fronts and Doors.

Metal Covered Mouldings

Uses: Our mouldings provide the architect, builder, decorator and designer with a medium for beautifying his project, both from a structural and decorative point of view. The substantial character of metal-on-wood construction gives Ames Mouldings an element of strength and permanence, which, combined with the effective beauty of their metal finish, make them ideal in all cases where a neat, modern appearance is desired, and where a material is needed which will stand the test of time.

Service

We make our own tools and dies in our well equipped plant, and manufacture every type and size of metal covered moulding in any finish. Our designers and tool-makers are skilled and we are in a position to assist in designing the type moulding required. Our production methods guarantee a promptness and quality of service which have been found highly satisfactory. We maintain a stock of several hundred patterns and shapes and are constantly adding new designs to our line. There is a nominal die charge for special order mouldings, regular material and labor charges being computed on a footage basis.

Specifications

Our mouldings are made of a core of Bass-wood, thoroughly kiln dried and free of knots, in eight and ten foot lengths. They have a covering jacket of .010 gauge finished metal, of any desired kind and finish. This metal is applied to the wood core through accurately tooled steel dies and rolls, thus guaranteeing a firm adhesion between wood and metal, an unmarred finish, and sharp, well formed edges and curves. Ames Mouldings will bend slightly around curves and can be ordered to conform to specified radii.

Store Fronts and Metal Doors

We also furnish and install newest type store fronts made of our extruded and hollow metal mouldings. These mouldings can be had in aluminum, architectural bronze, stainless steel, copper, etc., in any finish. Smartest modern, as well as period, effects can be achieved. Our prices are low for installations where permanence and quality are essential. Submit specifications and we will gladly quote.

Other Products

Our foil mouldings may be had in all standard shapes and patterns.

Frames and easels, manufactured from any and all of our mouldings, are made by hand to special order by skilled frame makers. The corners of these frames and easels are perfectly mitred, and dimensions given us are adhered to with the utmost accuracy.

Illustrated catalog showing over 100 *shapes and sizes sent on request*

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COLONIAL SALES CORPORATION

928 Broadway
NEW YORK, N. Y.
DEALERS IN PRINCIPAL CITIES

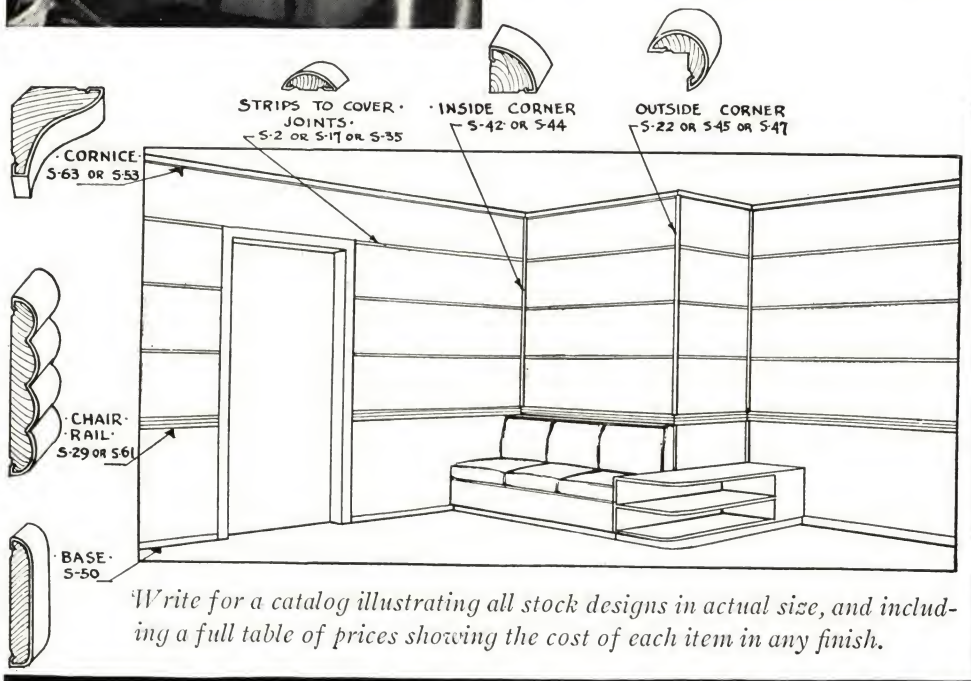
COSALCO METAL MOULDINGS

Cosalco Metal Covered Mouldings are offered in a selection of approximately one hundred shapes and sizes, any of which may be ordered for instant shipment in chromium, stainless steel, copper, brass, bronze, aluminum and nickel silver—bright or satin finish.

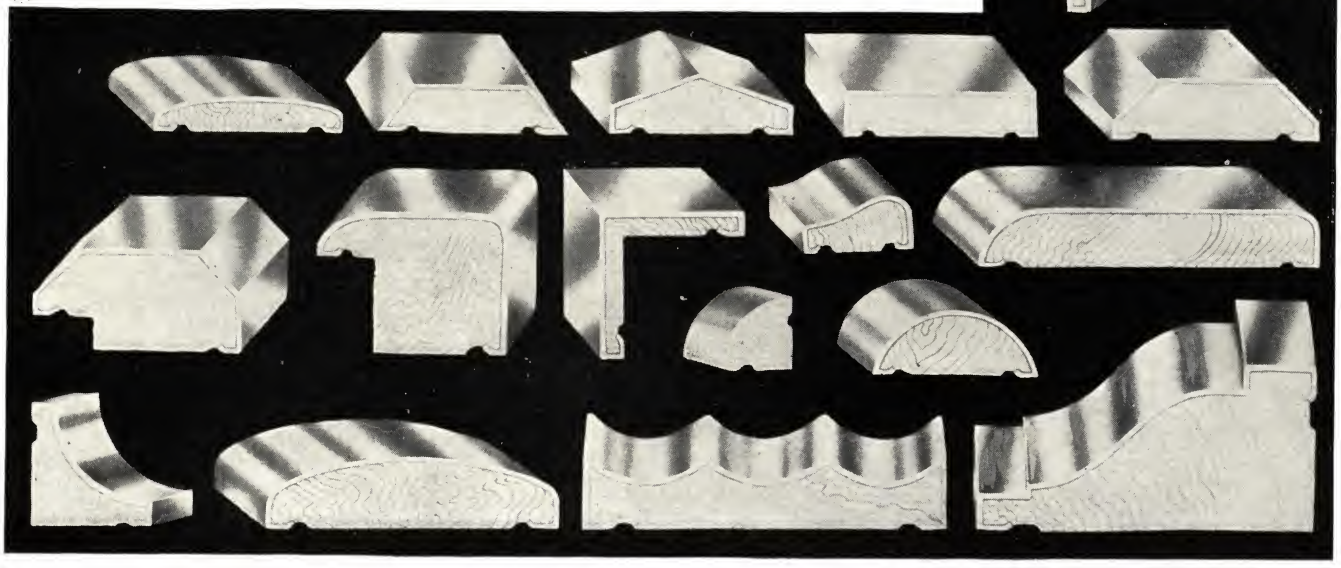
These mouldings are ideal for the modernization of wall surfaces and for the decoration of counters, bars, and fixtures. They are sharp in outline, flawless in appearance, and very easily handled. Special fasteners are included with every shipment free of charge.

While Cosalco Mouldings last indefinitely and are specified for the most exacting requirements, they are cheap enough to permit their use even where low cost is a primary factor.

Finished frames of all types and sizes are made up to order.



Write for a catalog illustrating all stock designs in actual size, and including a full table of prices showing the cost of each item in any finish.



MEMORANDA

THE HIMMEL BROTHERS CO.

Manufacturers of "Himco" Stainless Laminated Snap-On Mouldings

1409-15 Dixwell Avenue, HAMDEN, CONN.

(Suburb of New Haven)

For our catalog on Store Front Construction see File Index

"HIMCO" STAINLESS LAMINATED SNAP-ON MOULDINGS

Manufactured Under Patent 1984134 and Other Patents Pending

For Decorative Effects and As Cover Moulds Over Jointing of Sheet Materials

The effectiveness of stainless mouldings or bands in modern decoration and design is often desired but in many cases the cost is prohibitive. "Himco" now offers Non-tarnishable Stainless Laminated Snap-on Moulding within the same price range as copper, bronze or aluminum.

Stainless Laminated Snap-on Mouldings are non-tarnishable and made of Stainless Steel 18-8 laminated over a non-corrosive base. They present exactly the same appearance as solid stainless at a fraction of the cost. They require no polishing of any description.

Means of Fastening Are Invisible

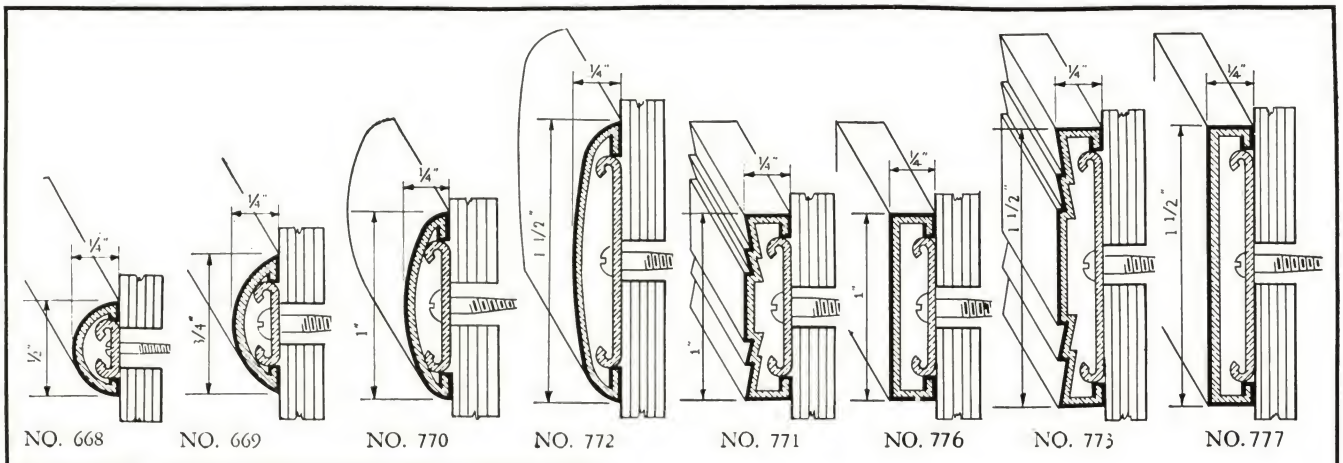
The beauty of decorative bands is spoiled when the means of fastening are visible. With "Himco" Mouldings a base fastening plate is secured in place over the joint between sheet materials or on flat surfaces. Then the finished moulding is snapped on over the base plate.

Other Metals and Shapes Also Supplied

"Himco" Snap-on Mouldings are also made in Aluminum, solid Stainless Steel and Bronze. Brass and Copper mouldings will be made to order.

Curved, bent and circular shapes can also be made to order.

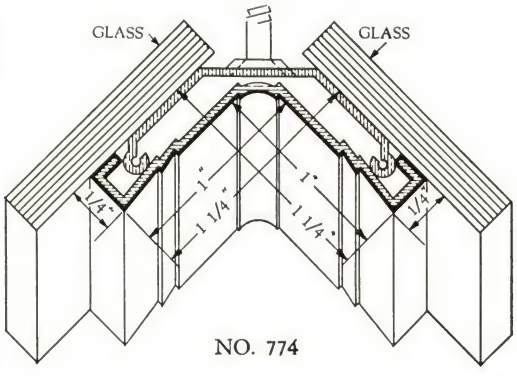
Application—The inner member is first applied with screws or nails and holds the sheet material firmly in place. The outer snap-on member snaps over the inner member completely covering all nails and screws.

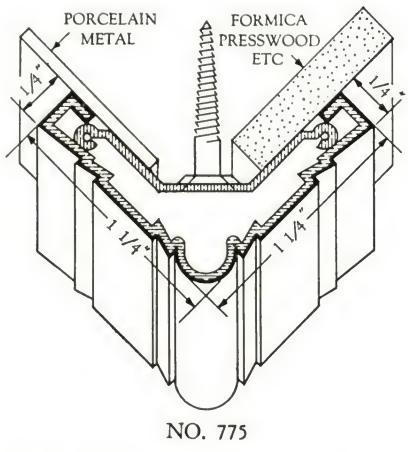


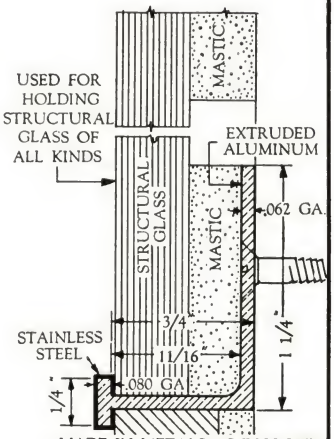
OUTER MEMBER IS NON-TARNISHABLE, STAINLESS, LAMINATED METAL, "ALUMCRO" (ALUMINUM ALLOY), SOLID STAINLESS STEEL OR BRONZE.

INNER MEMBER AND CONTINUOUS CLIP ARE OF NON CORROSIVE METAL

GAUGES OUTER MEMBER .032-INNER MEMBER .030







MADE IN METALS AS FOLLOWS
1X-ALUMINUM EXTRUDED
1XB-BRONZE LAMINATED
1XL-LAMINATED STAINLESS BLACK ALUMCROXITE

"HIMCO" STAINLESS, LAMINATED, SNAP-ON MOULDINGS

(Patented and Patents Pending)

PYRAMID METALS COMPANY

Manufacturers of SNAP-ON Mouldings

Chromium—Stainless Steel—Copper—Bronze—Brass

463 North Oakley Boulevard, CHICAGO, ILL.

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JACKSON, MISS., Fred Thrasher, Box 326
KANSAS CITY, MO., Reid Sales Co., 308 E. 17th St.
LOS ANGELES, CAL., E. B. Bradley Co., 757 San Pedro St. So.
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MINNEAPOLIS, MINN., H. F. Crinklaw, 610 E. 15th St.
MONTGOMERY, ALA., E. P. Avery, 223 Coosa St.
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NEW YORK, N. Y., W. C. Ford Co., 329 E. 45th St.
PHILADELPHIA, PA., W. C. Ford Co., 17th and Sansom Sts.
PITTSBURGH, PA., C. F. Gray, 604 Chamber of Commerce Bldg.
ST. LOUIS, MO., E. A. Johnson, 455 Paul Brown Bldg.
ST. PETERSBURG, FLA., Southern Equipment Co., P. O. Box 1795
SAN FRANCISCO, CAL., E. B. Bradley Co., 118 Fourth St.
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TOLEDO, OHIO, E. B. Yesbera, 325 No. Erie St.
WASHINGTON, D. C., W. C. Ford Co., 1426 H St., N. W.

Pyramid Snap-On Mouldings

Pyramid Metal Mouldings afford a modern decorative trim with a permanence that meets the need of architects and designers who plan for the future.

The Snap-On feature conceals all nails or screws and presents unbroken lines so desirable in modern decoration.

Thousands of homes, offices, bars, restaurants and business houses have profited through the atmosphere of refined richness which the correct use of Pyramid Mouldings brings.

Pyramid Mouldings are not plated. There is no coating to flake or wear off. They are made of Stainless Steel throughout—the only Chromium metal that does not rust, tarnish or corrode.

The many standard styles and sizes of Pyramid Metal Mouldings afford a wide variety of patterns to meet nearly every architectural need. Special designs can be made to order. Typical installations are shown on this page. Many others in our *new* catalog. Send for your copy.

Installation

The Snap-On feature of Pyramid Metal Mouldings insures economical application for new work or remodeling. Often this feature permits a labor saving of more than 50%.

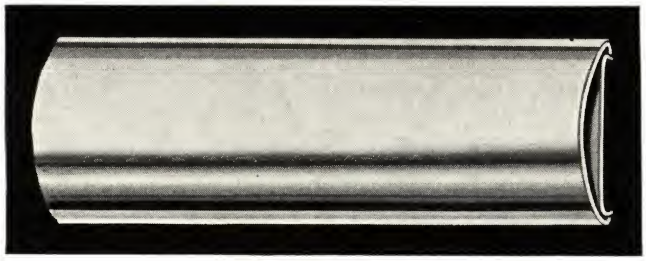
Installation is made after all other work is finished without regard to joints, thickness, or kind of wall covering material. Pyramid Mouldings afford utmost flexibility. They may be placed to suit the best design without regard to methods of construction.

Pyramid Mouldings are also available in Brass, Bronze, Copper or Aluminum. Bright Mirror or Satin Velvet Finish may be had on all metals.

Industrial Mouldings

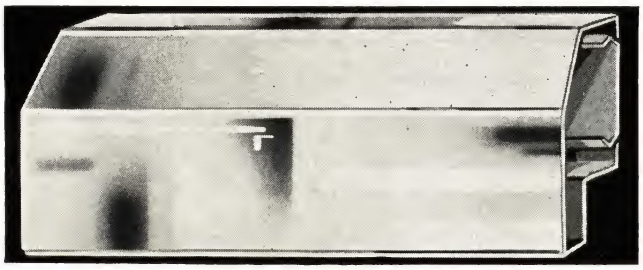
Pyramid issues an industrial catalog showing trim on many products, such as air conditioning, heater, bottle cooler and radio cabinets, stoves, signs, vending machines, beauty parlor furniture, trucks and streamline trains. Send for your copy.

PYRAMID SNAP-ON MOULDINGS



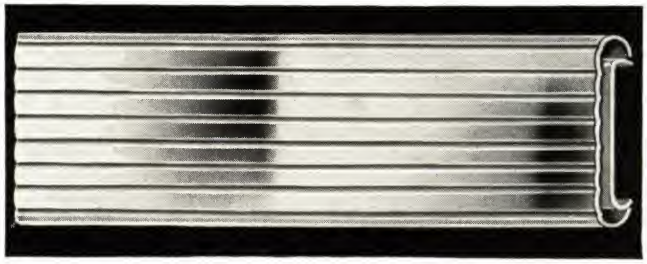
Half Round Mouldings

The above moulding is 13-S, 1 in. wide. Also made ¾, ½, ⅜ and ¼ in.



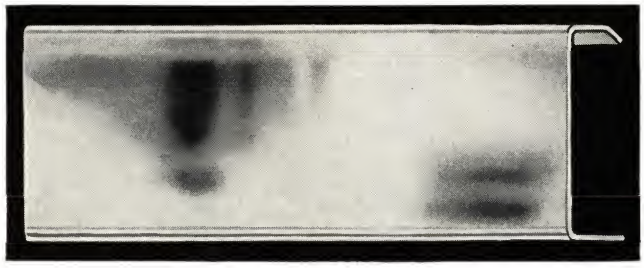
Cap Mouldings

For trimming top edge of wallboard, linoleum, tile, etc. CM-2 for material $\frac{3}{32}$ to $\frac{5}{32}$ in.; CM-4 for material $\frac{3}{16}$ to ¼ in.



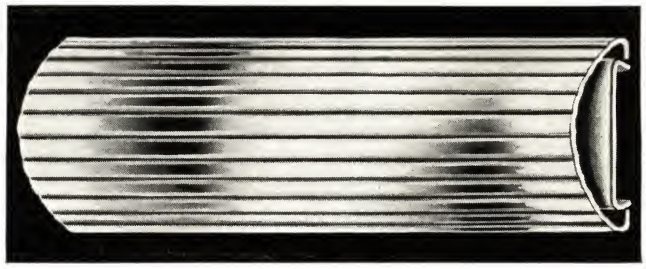
Flat Top Ripple Corrugated

12-RCS, 1 in. wide shown here. Also made ½, ¾ and 1¼ in. wide.



Counter Edge Mouldings

CE-1, shown, is used on edges of counters, cabinets and sink tops. Carried in stock for many thicknesses of tops. Other edge shapes made for different applications.

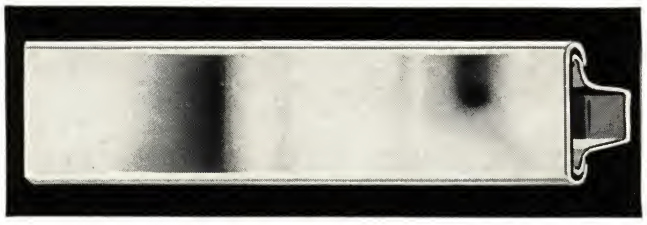


Half Round Ripple Corrugated

13-RCS, shown here, is 1 in. wide. Also made ⅜, ½ and ¾ in. wide.

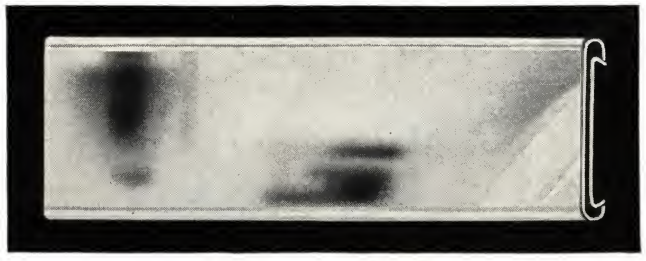
Triple Corrugated Pattern

16-TCS, 1¼ in. wide, shown, has three oval corrugations. Also made 2 in. wide, 22-TCS; and 1½ in. wide, 18-TCS.



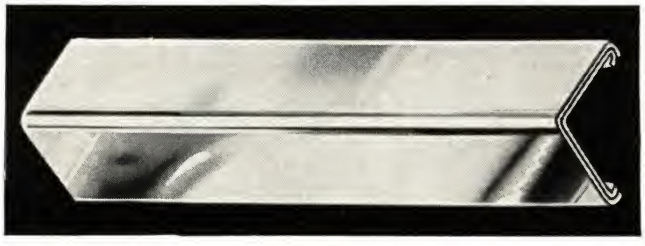
Divider Mouldings

10-DS, ¾-in. Flat, illustrated, is used for glass tile, etc. ¼ in. thick or more. Also made in ¾-in. Half Round, No. 1-DS, with same track.



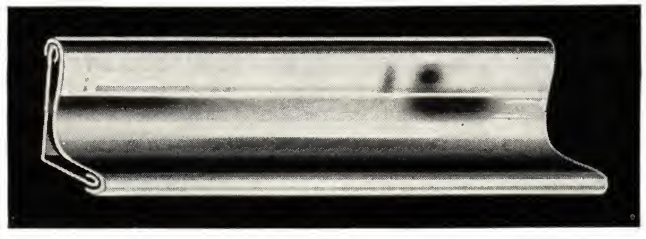
Flat Top Snap-On Mouldings

Illustration shows 12-S, 1 in. wide. Other sizes: ¼, ⅜, ½, ¾, 1¼, 1½, 1¾ and 2 in.



Outside Corners

10-OS, $\frac{11}{16}$ x $\frac{11}{16}$ in., illustrated. Also made ¾ x ¾ in., 12-OS; and 1¼ x 1¼ in., 16-OS.



Inside Corners

This is 5-IS, $\frac{11}{16}$ x $\frac{11}{16}$ in. Also made ⅞ x ⅞ in., 17-IS. The same design may be had with special track for glass, porcelain, etc.—No. 7-IS. Another pattern is 9-IS, ⅞ x ⅞ in., with a right angle cover.

ACME ASBESTOS COVERING & FLOORING CO.

INCORPORATED 1907

TELEPHONE
MONroe 2342-44

MANUFACTURERS AND CONTRACTORS
250 North Elizabeth Street, CHICAGO, ILL.

NEW YORK OFFICE
30 Church Street

ACMETYLE

A GOOD MAGNESIA FLOORING

A Low-Cost, Modern Floor

Laid as a plastic over any sub-base, new or old, at the lowest cost of any permanent flooring. Acmetyle has a place wherever buildings benefit by harmonizing, colorful, attractive and durable floorings, which combine cost-free maintenance, fireproofness and decorative charm.

Where Acmetyle Is Used

For twenty-three years Acmetyle has been recording a fine service in public buildings, hospitals, schools, churches, libraries, stores, theaters, office buildings, as well as halls, social structures and larger residences.

The Acmetyle Record

Since 1914 Acmetyle floors have served beyond expectation under every type of wear and exposure, setting standards of excellence and satisfaction, winning the warm approval of owners and architects alike.

That record is an open book—request it.

Old Floors Reconstructed

Acmetyle converts into modern, attractive surfaces, *old floors* of every type, without the expense of their removal.

Ten Warm, Permanent Colors

Are offered in Acmetyle Flooring out of which countless smart two-color and three-color combinations may be planned to harmonize with appointments and enhance decorative and architectural effects.

Oak Buff	Slate Gray
Rich Brown	(Light or Dark)
Chestnut Brown	Black
Light Brown	Chromium Oxide
French Ochre	Green
English Red	Ultramarine Blue

A cove base, border or cross bars of one color, with appropriate selections for floor panels is attractive for any large space.

Lasting beauty of floor color and texture is possible with Acmetyle.

Acmetyle Is Fireproof

Fireproof in itself; and Acmetyle Floors are a barrier to the spread of fire.

Durable

Acmetyle resists the hardest wear indefinitely. The first Acmetyle Floors are still satisfactory.

Fine Appearance

Attractiveness is retained even under great abuse throughout its long life.

Sanitary

Acmetyle seals corners and joints tight, making floors waterproof, dirt, grease, oil and bug proof.

Comfortable

Acmetyle Floors are resilient, easy-on-the-feet, non-slippery, non-dusting, are comfortable and look comfortable.

The Acmetyle Guarantee

Acmetyle Floors are fully guaranteed against defects.

Service and Samples

A Service Department co-operates with architects and their contractors in the interest of attractive, permanent and economical floor construction. Actual samples of Acmetyle available. Prompt information and estimates.

SPECIFICATION AND SUBFLOOR DATA FOR ACMETYLE MAGNESIA FLOORS

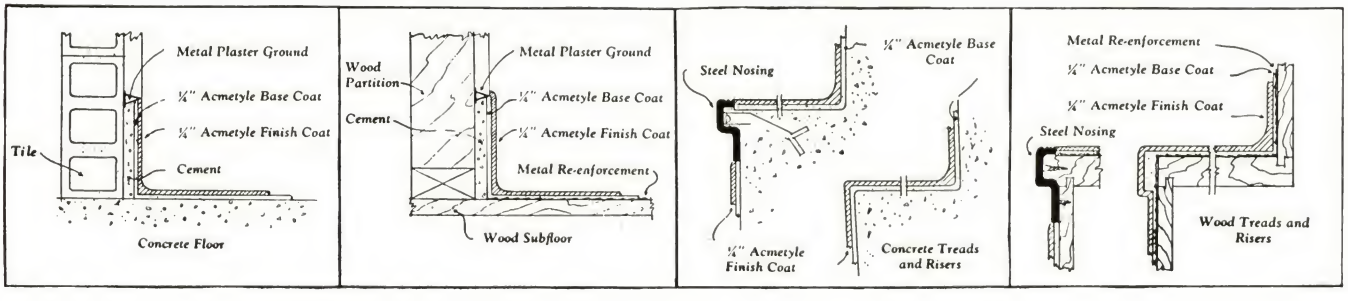
Specification—Acmetyle Magnesia Floors (and cove base) shall be furnished and installed by the ACME ASBESTOS COVERING & FLOORING CO., 250 North Elizabeth Street, Chicago, Ill., or its authorized agents, in two ¼-in. layers (or specified thickness) in such colors and patterns to be selected by the architect. All work shall be rubbed with steel wool and given one coat of liquid wax on completion.

Preparation for Acmetyle—The building shall be enclosed; plastering shall be completed; trim shall be set and stained. The temperature of rooms shall be at least 65° F. while the Acmetyle is being laid. It is important that the laying of Acmetyle be postponed as late as possible, as it is a finished material and must be protected if other trades are to work over it.

Concrete Subfloors—All subfloors shall be structurally sound, hard, clean, free from debris and bone dry. Specifications for concrete floors prepared by the Portland Cement Association are recommended. Concrete in steel stairways shall be at least 2 in. thick and reinforced. Slabs shall be brought to within ½ in. of the finishing line (or for other depths of flooring as provided by specifications) and be given a screed or float finish. Pitch desired in finished floor shall be provided in the slab. Cinder, lime, porous or wet concrete is not acceptable as a foundation for Acmetyle.

Wood Subfloors—Six-inch sheathing, not less than ⅞-in. thick, laid rough side up, fairly close together is preferable; must be well-seasoned, securely nailed and supported so that floor is firm and not springy. Metal reinforcer shall be furnished by the flooring contractor and nailed securely to the wood with roofing nails on 6-in. centers.

Backing for Wainscot and Cove Base—Acmetyle can be laid directly on brick, terra cotta, concrete and stone, all of which should be brought to within ⅜ in. of the finishing line; to bring same to the proper level use a 1:2 mix portland cement and sand not thinner than ¾ in. Acmetyle will not adhere to lime plaster or gypsum tile. Wood sheathing ⅞ in. or thicker may be used as above, securely nailed. Where Acmetyle base or wainscot is installed flush with plaster a wood or metal ground strip shall be installed by others to separate them.



KOMPOLITE CO., INC.

Flooring Manufacturers, Engineers and Contractors

SINCE 1900

111-115 Clay Street, BROOKLYN, N. Y.

The KOMPOLITE CO., INC. has specialized in the manufacture and installation of many types of resilient floor coverings for almost 40 years. The keynote policy of the company has been absolute integrity of business, product and craftsmanship. There is nothing more valuable to owner, architect or contractor than the knowledge that he is dealing with the foremost manufacturer, giving centralized responsibility and protective guarantee. All manufacturing processes are carefully controlled to produce a uniform product of the highest quality. Mechanics who do the installation are all old employees with from 15 to 30 years' experience in their respective trades.

A careful study of the behavior of all types of flooring under various traffic conditions, for almost forty years, puts the company in a position to offer sound engineering advice on flooring problems.

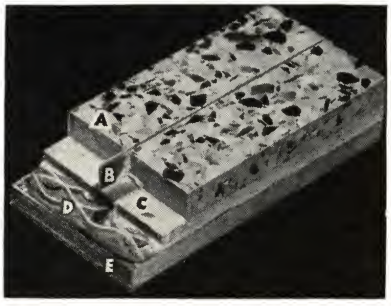
Our engineers are available to you without obligation to assist in the selection of the most satisfactory and economical flooring for any specific service condition in old or new buildings.

KOMPOLITE PLASTIC MARBLE "CUSHIONED TO THE TREAD"

A floor of marble, meeting the highest architectural standards, which deadens sound, is sanitary, dustless and non-slippery. Over a million square feet installed in important buildings bringing new beauty and lustre to department stores, hospitals, restaurants, churches and other structures that require high quality combined with exceptional beauty, easy maintenance and long life.

It is composed of the finest quality imported marble with a pure white base binder developed through extensive research and experience. Angled strips of heavy brass have been specially designed to give greater wear and strength.

Our exclusive Kompo-Seal (integral hardener) gives the surface a rich satiny lustre. Use of a pure white base enables us to produce a great variety of rich colors in the binder. This combined with a varied choice of marble colors, makes possible a wide range of artistic effects.



Cutaway Section of Kompolite Plastic Marble

A—Kompolite Plastic Marble layer. B—Angled brass strip. C—Cushion undercoat. D—Metal lath over tar felt. E—Old floor

Advantages

Quick-set Binder used for alteration work permits installation without interrupting business.

Kompolite Plastic Marble can be laid directly over wood, concrete or steel. Weighing only one-fifth to one-third as much as cement terrazzo prevents the overloading of supporting structures. Its high flexibility and tensile strength prevent cracking.

Kompolite Plastic Marble (see illustration) is keyed to the wood sub-floors by heavy expanded metal lath cleated over tarred felt to make the old floor and the new a single permanent unit. Our cushion undercoat insures an even and sound-deadening surface. Kompo-Seal (integral hardener) not only gives lustre to the finished floor, but results in a tougher wearing, sanitary, dustless and water-resisting surface.

Modern Floor for Modern Effect

Kompolite Plastic Marble recently used to modernize Stern Brothers, one of New York's largest department stores

Kompolite Plastic Marble Folder and Specifications on Request

A Million Square Feet Where Beauty and Durability Are Paramount

John Wanamaker, New York, N. Y.
Abraham & Straus, Brooklyn, N. Y.
The Namm Store, Brooklyn, N. Y.
Adam, Meldrum & Anderson Co., Buffalo, N. Y.
McCurdy & Co., Rochester, N. Y.
G. Fox, Inc., Hartford, Conn.
Anderson Newcomb Co., Huntington, W. Va.
J. A. Chapman, Milwaukee, Wis.
Cleland Simpson Co., Scranton, Pa.
Watt & Shand, Lancaster, Pa.
Penn Traffic Co., Johnstown, Pa.
Wm. Filines Sons Company, Boston, Mass.
Forbes & Wallace Co., Springfield, Mass.
Albert Steiger Co., Springfield, Mass.
Outlet Co., Providence, R. I.
F. W. Woolworth Co. Stores
Longchamps Restaurants, New York, N. Y.
Boulevard Cafeteria, Albany, N. Y.
Lüchow's Restaurant, New York, N. Y.
Clinton Trust Co., New York, N. Y.
Mount Sinai Hospital, New York, N. Y.
St. Patrick's Church, Newburgh, N. Y.
St. Joseph's Church, Newburgh, N. Y.
Fordham University, New York, N. Y.

KOMPOLITE OFFERS A COMPLETE FLOORING SERVICE

Kompolite Magnesite Composition Flooring—*The service floor for service spaces.* A seamless, sanitary, fireproof, resilient composition flooring of highest quality. Our Kompo-Seal (integral hardener) produces a tougher surface that resists wear and the penetration of moisture. The finest composition installed in a heavy layer with a triple-troweled finish by highly skilled and experienced mechanics.

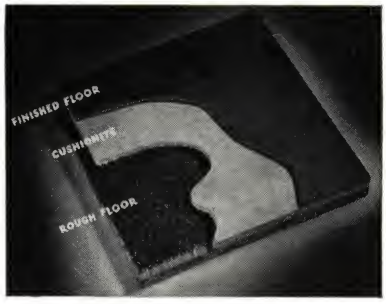
A superior sanitary cove base for integral construction with rubber tile, asphalt tile or plastic marble floors.

Portland Cement Terrazzo Flooring—Quality terrazzo installed in accordance with terrazzo specifications of the National Terrazzo and Mosaic Association.

Asphalt Tile Flooring—"Tile-Tex"—We are the authorized distributors of Tile-Tex tile, whose complete catalog appears in this edition (see File Index).

Rubber Tile Flooring—High quality rubber floor tile, moulded cove base, wainscot, cap, plinths, saddles, treads, risers and nosings, plain and marbleized colors in an unlimited variety of designs, installed by our skilled and experienced workmen.

Cushionite—Much deterioration and wear of resilient floor coverings is due to uneveness of underflooring. Cushionite, a leveling foundation which can be laid over wood, adds years of life to such flooring, and in many cases makes such an installation possible. It is a surfacing composition that levels worn or uneven floors of wood, concrete or steel and provides a perfect base for any resilient floor material. It is sound-deadening, tough, durable and economical. Trowel-applied, seamless, fireproof. Laid ¼ to 1 in. thick. Material sold in bulk, or installed.



Floor Construction with Cushionite

Folder on request

Specifications and Engineering Service Furnished on Request without Obligation

MEMORANDA

MARBLELOID, INC.

Flooring Specialists Since 1905
Manufacturers of and Contractors for Marbleloid Floorings
NORTH BERGEN, N. J.

MARBLELOID SERVICE, SPECIFICATIONS, SAMPLES AND GUARANTEE

We offer the architect, engineer or owner products that are the result of thirty-three years of specialization in the manufacture and installation of plastic magnesia floorings. Marbleloid floors are built upon technical research and knowledge. They are installed under rigid supervision. Our unique installation service provides fullest assurance to the architect that in specifying *"Marbleloid,"* he will have the work installed strictly according to his standard.

MARBLELOID FLOORINGS
REG. U.S. PAT. OFF.
TRADE-MARK

All Marbleloid products are installed by the Company's skilled mechanics, regularly employed. All installations are rigidly guaranteed against all defects in material or workmanship.

Definite proposals for complete installations, together with detailed specifications and samples, will be gladly furnished upon request.

Our Engineering Department will welcome an opportunity to have a technically trained representative consult with you regarding your flooring problems.

Marbleloid Water Repellent "Plastic Magnesia"
(Symbol PM)

(Now produced in new and hitherto unobtainable colors and color tones)

A standardized, permanent, fireproof, resilient plastic magnesia product for floors, coved sanitary base, wainscot, trim, stair treads, risers, etc. The ingredients have been selected and combined to produce a flooring which is pleasing in appearance, non-porous, non-slippery, low in thermal conductivity, durable, high in structural and crushing strength, light in weight and relatively inexpensive. Attractive colors can be furnished to fit into any desired color scheme. In Marbleloid, *all colors can be produced and in any tone, from a dark neutralized one to a brilliant spectral hue.* Samples of our newest colors are available to architects upon request.

The product bonds to wood, concrete or steel and is used in new or alteration work. It is installed in a plastic state and in two coats. The fibrous undercoat, with a minimum thickness of $\frac{3}{16}$ in., serves to take up inequalities in the foundation and also as a cushion for the harder, wear-resisting top coat, which is $\frac{5}{16}$ in. thick.

The flooring weighs approximately 3 lbs. per sq. ft.; its compressive strength is over 5,000 lbs. per sq. in.; its average tensile strength is 750 lbs. per sq. in.; it will withstand a heat of 1700° F. without cracking or disintegrating.

All Marbleloid Floorings are definitely water-resistant. This feature alone assures the architect of an improved magnesite flooring which, by repelling water, gives longer and more satisfactory service.

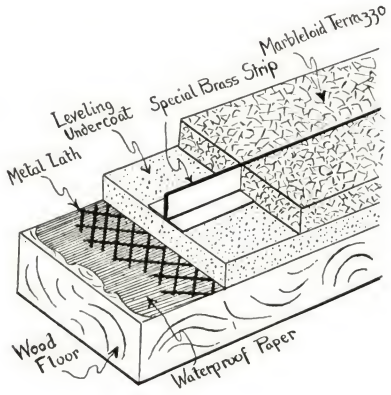
Marbleloid Water Repellent Heavy Duty Flooring
(Symbol HD)

(For Factories and Industrial Plants)

Marbleloid Heavy Duty Flooring is a harder flooring than "Plastic Magnesia," but should not be confused with the usual so-called "all mineral" type of magnesia flooring. Calcined magnesite is used but the other ingredients, not used in the "Plastic Magnesia" material, have been selected and combined to give a product that will withstand the severest industrial plant wear. This flooring is especially recommended for trucking aisles, runways and similar spaces subject to the traffic of heavy bodies. Like the "Plastic Magnesia" flooring, the heavy duty industrial flooring may be applied directly over the old worn flooring, whether of wood, concrete or steel. The usual thickness is from ¾ in. to 1 in. It is furnished in any color.

Marbleloid Water Repellent Terrazzo Flooring
(Symbol TZ)

(A light-weight, water-resistant terrazzo of highest quality)



Marbleloid Terrazzo is not a substitute for portland cement terrazzo flooring. It is a high grade terrazzo flooring, unique in its use and advantages. It may be *installed directly over a wood, cement* or other worn-out flooring in a thickness of only ⅝ *in. to* ¾ *in.,* thus avoiding the necessity of removal of old flooring and preparation of a special foundation.

It is non-slip. Marbleloid Terrazzo is noted for its beauty, obtained by uniformly *clearer colors or tints* in the binding cement.

Marbleloid Terrazzo has an exceptionally high tensile strength, resulting from the magnesium oxy-chloride cementing material used. This high strength permits the use of a larger proportion of marble aggregate and a finished surface is obtained 85% of which is made up of imbedded marble chips. Cracking, excessive contraction or expansion, pitting, disintegrating, chipping (especially at the dividing strips) are all provided against by carefully balanced formulae.

Marbleloid Terrazzo *weighs only 6 lbs. per sq. ft.* It may be installed at night and walked on the following morning. It is installed in two coats. The undercoat, serving as a cushion and leveling off the foundation on which it is laid, may be installed in a thickness of as little as ¼ in. The finish terrazzo coat, installed in a thickness of ⅜ in., is most attractively set off by the use of our patented *double angle* brass dividing strip. This strip is especially designed to compensate for structural movement. The material is an effective fire-stop.

Marbleloid Water Repellent Travertine Terrazzo (Patented March 29, 1927) (Symbol TT)

This product is an adaptation of Marbleloid Terrazzo. Imported travertine marble chips are used and, by a patented process, dark colored veinings are formed in the material to obtain a replica of the travertine block. The effect of individual slabs of travertine is obtained by blocking off the floor with brass strips. The bonding magnesia cement is colored to match that of the travertine chips used.

The following table shows the particular type of Marbleloid Flooring and coved base recommended for buildings and spaces listed. Symbols indicate types of flooring.

	Floor	Base		Floor	Base		Floor	Base
BANKS { Public Spaces	TZ	TZ	HOMES { Foyers	TZ	TZ or PM	RESTAURANTS { Dining Rooms	TZ or PM	TZ or PM
BANKS { Work Spaces	PM	PM	HOMES { Service Portions	PM	PM	RESTAURANTS { Kitchen	PM	PM
CHURCHES { Sanctuary and Aisles	TZ	.....	HOSPITALS { Corridors	TZ	TZ or PM	SCHOOLS { Corridors	TZ	TZ or PM
CHURCHES { Pew Spaces	PM	.....	HOSPITALS { Wards	PM	PM	SCHOOLS { Classrooms	PM	PM
DEPARTMENT STORES { Throughout	TZ or TT	.....	OFFICE BUILDINGS	TZ or PM	PM	SALES ROOMS	TZ or PM	TZ or PM
			PUBLIC BUILDINGS	TZ	TZ or PM	INDUSTRIAL PLANTS	HD	PM

SELBY, BATTERSBY & CO.

Manufacturers of and Contractors for Flooring

PHILADELPHIA, PA.

FLOORCRAFTERS

Products

SELBALITH, a Plastic Magnesia Flooring.
LEVELITE, a Plastic Floor Leveler.
SELBAKOTE, a Factory Floor also a floor-leveler.
SELBATEX, a Mastic Floor.
SELBATRAZ, a Thin, Light-weight Terrazzo.
We are also authorized contractor-dealers for:
Goodyear Rubber Flooring.
Wingfoot Sheet Rubber Flooring.
Goodyear All-weather Link Mats.
Goodyear Rubber Matting.
Tile-Tex Asphalt Tile.
Sloane-Blabon Linoleum.
Cork Tile.
Cork Composition Tile.
Floorcrafters Floor Maintenance Materials.
Kauxeme Marine Glue.
Selbakote Asphalt Emulsion.

The Company—Experienced Floor Crafters

For more than twenty-three years, the personnel of this Company has continuously and successfully made and laid floors in buildings and on the majority of ships built in the United States. Significant is the fact that these products have withstood the severe stresses and vibrations of the steel deck plates of ships in heavy weather during all these years, because this proves, beyond doubt, the ability of these flooring materials to withstand the much milder stresses in a building.

Services include "diagnosis" and recommendations. Our experience qualifies us to recommend the best type of floor for any given space—our diversified line of floors prevents our having any "axe to grind", as would be the case if we manufactured only one floor. Architects, designing buildings and ships, have been availing themselves of this free service, because they have found it to be reliable. Expert craftsmanship with the proper materials makes a good floor, but more depends on the craftsmanship than on the materials used. Our staff of foremen and mechanics have, without exception, a long record of successful jobs—the materials we lay are tested before laying and cannot be excelled.

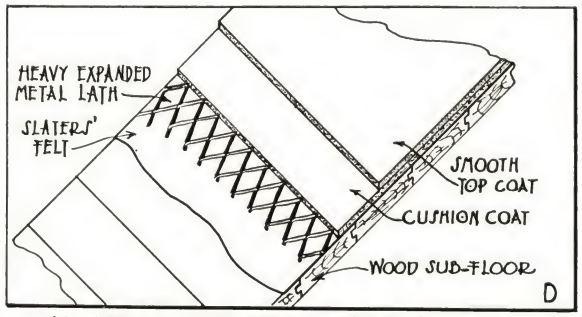
PLASTIC MAGNESIA FLOORS

Selbalith — When worn floors are to be renewed, Selbalith serves as a leveling material as well as a finished flooring, thereby saving expense. When a seamless and sanitary flooring is required in new buildings where there is heavy traffic, Selbalith gives an enduring attractive surface that is easily cleaned and easy to maintain. Though usually laid in one color, Selbalith is often laid as multi-colored tile with joints in contrasting colors. This is accomplished by grooving the floor and filling in with material of a contrasting color. Applied with a trowel over wood, concrete, steel or gypsum to any thickness from ½-in. upward. Appropriate in stores, apartments, churches, restaurants, schools, etc.

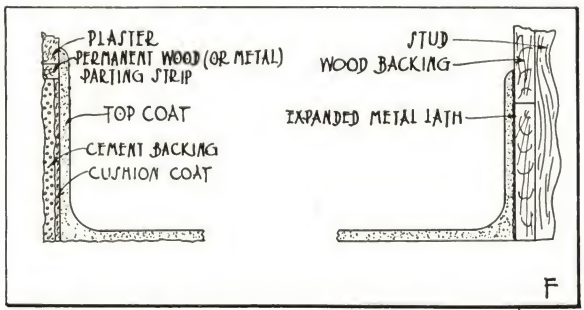
"S. S. Santa Rosa"—One of the Four New Grace Liners
Selbalith Flooring in all interior spaces on hundreds of ships—proof that it is crackproof and fireproof

Selbatraz Terrazzo—A plastic magnesia terrazzo floor that may be laid ¾ in. thick directly over a wood or concrete floor. Brass dividing strips may be used to set the floor off in blocks of any desired size. A highly decorative floor appropriate for stores, hotels, corridors, waiting rooms, etc. In older buildings with wood floors, Selbatraz modernizes by converting a shabby wood floor in a corridor for instance, to a smooth, colorful and beautiful terrazzo, withstanding wear for years to come.

Color Selection — Not only the marble chips, which constitute more than 80% of Selbatraz, may be obtained in various colors, but also the finer aggregates are of many different colors.



AS APPLIED OVER NEW OR WORN WOOD FLOORS



DETAIL OF SANITARY COVE BASE (OR WAINSCOT)

SELBATEX MASTIC FLOORING

Laid in five coats to a thickness of ⅛ in. over smooth cement, steel or any sub-floors listed above, Selbatex makes an ideal flooring, particularly for corridors of schools and institutional buildings. It is quite inexpensive, easily cleaned, and is furnished in darker shades of red, green and tan. If more than ⅛ in. is needed because of sub-floor being uneven, an undercoat of Selbakote covered with two coats of Selbatex gives an equally colorful and smooth floor (See "HEAVY DUTY FLOORS—SELBAKOTE").

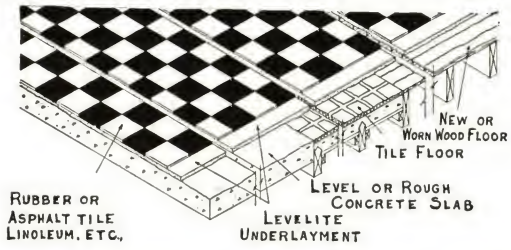
HEAVY DUTY FLOORS

Heavy Duty Selbalith — In factories, warehouses and wherever a non-dusting floor is needed for areas where heavy traffic and trucking prevail (except where subjected to constant moisture), heavy Duty Selbalith is the appropriate flooring. Composed of harder aggregates than standard Selbalith, it resists all the stresses ordinarily met with in industrial buildings, and in addition, is immune to the action of oil and grease.

Selbakote—Where dampness or moisture prevail, or in spaces exposed to the weather, but not where grease and oil are prevalent, Heavy Duty Selbakote is an extremely tough and durable flooring for industrial purposes. Made under various formulae to suit varying conditions—sometimes laid very thick and with heavy aggregates, and at other times laid thin with light aggregates—Selbakote takes the place of cement topping, and will bond securely to all types of surfaces.

UNDERLAYMENTS

The beauty of many finished floors is spoiled by uneveness due to irregular sub-floors. On renovation jobs, underlayments like Levelite or Selbakote Smoother assure a smooth finished floor, cost very little and are therefore a good investment. On new buildings, instead



of having the concrete contractor install the cement topping, many architects specify that the slab shall be floated level and even, but not steel troweled, the surface be ⅜ to ½ in. below finished floor line, that the resilient flooring contractor apply Levelite or Selbakote Smoother ¼ in. thick (in place of cement topping) to a smooth even finish before laying resilient flooring, such as linoleum, rubber or asphalt tile. This puts the entire responsibility for a smoothly finished job on the resilient floor contractor and costs little, if any, more than an uneven job with divided responsibility.

Levelite—Originated as an extremely lightweight leveling coat for lapped steel deck plates of ships, Levelite has found wide use as a leveler of uneven floors of any type wherever carpet, linoleum, rubber, asphalt tile or similar floors are to be laid. A Levelite floor consists of three materials, namely: Levelite Bonder applied to the sub-floor to effect a secure bond; Levelite Compo in powder form; and Levelite Emulsion in paste form. The Compo and Emulsion are mixed together and troweled on the uneven floor to a thickness of from ⅛ in. upwards. It may be laid to a featheredge. Levelite will take and hold tacks, nails and screws; may be bored or sawed with carpenter's tools without chipping or breaking. Weight less than 5 lbs. per sq. ft. 1 in. thick. Levelite contains considerable cork and is therefore an excellent insulator and sound deadener. Levelite is verminproof, non-cracking, non-bulging, non-inflammable. In renewing worn wooden stair treads or filling in steel treads, Levelite is particularly effective. Levelite will bond to cement, concrete, steel, terrazzo, ceramic or quarry tile, or to marble without any mechanical bonder. The Levelite Bonder suffices. Over wood floors it is sometimes necessary to nail down poultry wire first, merely as a reinforcing, because of possible "working" of the boards.

Selbakote—Heavier than Levelite, not quite so resilient, but just as durable, and a little less expensive, Selbakote is especially appropriate as an underlayment, particularly where dampness exists or even where exposed to the weather.

TYPICAL INSTALLATIONS

Shrine Hospital, Philadelphia, Pa.
Penn-Wynne School, Penn-Wynne, Pa.
West Jersey Hospital, Camden, N. J.
Lankenau Hospital, Girard Ave. and Corinthian St., Philadelphia, Pa.
Women's Club and Library, Bala-Cynwyd, Pa.
Widener Memorial School, Broad and Olney Sts., Philadelphia, Pa.
Automobile Club of Philadelphia, 23 So. 23rd St., Philadelphia, Pa.
Excelsior Consistory, Collingswood, N. J.
Schuylkill County Almshouse, Schuylkill Haven, Pa.
Colton Manor Hotel, Atlantic City, N. J.
Hotel Normandie, 36th and Chestnut Sts., Philadelphia, Pa.
Sears Roebuck & Co., Roosevelt Blvd., Philadelphia, Pa.
Viscose Company, Lewistown, Pa., and Marcus Hook, Pa.
National Oil Products Co., Harrison, N. J.
E. I. DuPont & Co., Gibbstown, N. J.
Philco, C and Ontario Sts., Philadelphia, Pa.
Bayuk Cigars, Inc., Lancaster, Pa.
Chas. Webb & Son, 116 Chestnut St., Philadelphia, Pa.
University of Pennsylvania, Philadelphia, Pa.
Fitkin Memorial Hospital, Asbury Park, N. J.

Penn Wynne School, Lower Merion Township, Pa.
Ralph E. White, Architect
21,000 sq. ft. Tile-Tex flooring

Penn Wynne School Cafeteria
The Tile-Tex flooring in this room must withstand the daily traffic of a large number of children

THE DURAFLEX CORPORATION

MANUFACTURERS OF

Duraflex Asphalt or Mastic Tile (Mastic or Composition Tile)
Duraflex-A Mastic Flooring
Duraflex Industrial Asphalt Mastic Flooring

MAIN PLANT AND OFFICE

BALTIMORE, MD.

NATIONAL DISTRIBUTION

Duraflex Asphalt Floors—in service 10 to 12 years and more—have long since proven the value of this product and the principles of quality behind it.

The road to "economy" leads straight to "quality."

There is nothing *cheaper* that can be substituted for "quality."

The extra percentage you pay for "quality standards" over what you pay anyhow, is the cheapest ingredient you buy into your material.

DURAFLEX TILE

For Schools, Office Buildings, Hospitals, Institutions, Stores, Rooms, Corridors, Laboratories, Recreation Rooms, Basement Floors, etc.

Duraflex Tile is made of asphalt and carefully prepared thermoplastic gums, combined with asbestos fibre, selected fine fillers, and the very best of color pigments, compressed under heavy pressure to tile form.

Thickness—$\frac{3}{16}$ and $\frac{1}{8}$ in.

Sizes—Standard: 6x6, 9x9, 9x18, 9x27, 12x12 and 12x24 in. Special sizes for special designs.

Colors—Tan, brown, red, green, gray, blue and black. Various shades. Can be produced to closely match any similar color.

It is a quiet, resilient, warm floor that is non-slippery, even when wet, is waterproof, non-absorbent and highly sanitary. It is highly resistant to fire, acids, alkalies and electricity.

Typical Duraflex Tile Flooring

When replacements become necessary through damage or wear (by excessive use of a small area), or alterations, they can easily be made by installing new tile only in the area affected, without changing the appearance of the floor or showing signs of the repairs made.

Specifications for Duraflex Tile Flooring—(Note to the Architect: Use above description, stating thickness, size and color desired.)

The grounds or subfloor on which Duraflex Tile is to be laid shall be as follows:

General—All surfaces to serve as grounds on which Duraflex Tile are to be laid shall be furnished in place by others, structurally sound and solid, broom clean, and free from scale, rust, chalky or laitance deposits, grease, paints or other foreign substances. The level or pitch required must be obtained in the subfloor. A rigid stop of metal, or other material, must be provided where the Duraflex Tile floor ends at landings, balconies, doorways, etc. The top of the stop must be at the grade of the finished floor, and the stop must be of the thickness of the tile specified.

Cement Subfloor—Where laid over a cement floor, the cement finish shall be hard troweled to a true, smooth and even surface a distance below the finished floor equal to the thickness of the tile to be used ($\frac{3}{16}$ or $\frac{1}{8}$ in.).

Wood Subfloor—Wood subfloors shall be thoroughly seasoned and dry to insure against warping, with all boards securely nailed, rigid, closely spaced and without movement between the boards. ($\frac{1}{2}$-in. Magnesite Undercoat, asphalt mastic undercoat, or 15-lb. felt, to be laid by the tile contractor on the wood under the tile according to the architect's requirements, which must be stated in the specifications to be installed according to the tile manufacturer's approved specification).

Base—Where sanitary cove base of same material as Duraflex Tile floor is specified, a smooth cement base of the height as specified shall be constructed by the cement contractor flush with the plaster, the cove at the floor line to be made tangent to the finished floor level, leaving at the point of tangency a square shoulder, of a height above the subfloor equal to the thickness of the tile specified.

The cement base is to be covered with Duraflex Base Coating, in any of the standard colors, according to the specifications of THE DURAFLEX CORPORATION.

Guarantee—THE DURAFLEX CORPORATION shall guarantee the tile to be free from all defects in material and workmanship, and for one year from date of completion of the work, shall furnish without charge, any tile needed to replace any such defective material, provided payments have been made for the work as agreed, and notice of such defectiveness is given to them in writing.

The contractor installing the tile shall guarantee first class workmanship and materials, and that the standard specifications and conditions of THE DURAFLEX CORPORATION for proper installation and use of the material, have been followed and that all work of installation necessary to repair any defects shall be done by him promptly, without cost to the owner, and completed within thirty days after receipt of notice.

Neither the tile manufacturer nor the installing contractor will be held responsible for defects caused by defective backing or underfloors, or to improper work or materials of other parties, nor for any unevenness or unlevelness in the finished floor, which is due to unevenness or unlevelness of the underfloor not furnished by them.

DURAFLEX-A FLOORING

For Schools, Office Buildings, Hospitals, Gymnasiums, Laboratories, etc.

Duraflex-A Flooring is made of a ductile mineral rubber or asphalt, is applied cold in plastic form, and produces a flooring resembling linoleum. It can be applied over new or old cement, composition, wood or steel floors, and stair treads, except heavy duty factory or shop floors, and those subject to the action of oils and greases.

Duraflex-A forms a continuous seamless finished flooring that bonds solidly and practically integrally to the subfloor.

Made in solid colors: Olive green, tan, brick red and black.

Typical Duraflex Mastic Flooring

Duraflex-A floors can be maintained in perfect condition, equal to new, at all times because the surface is renewable in whole or in part by simply recovering worn or damaged parts with additional plastic material. The new part forms a hermetic seal with the old, or bonds solidly to the subfloor if worn through. For this reason, Duraflex-A is a permanent floor surface of the building and should be so considered.

Descriptive folder giving full details and specifications for installation will be furnished.

DURAFLEX INDUSTRIAL ASPHALT MASTIC FLOORS

For Plants, Factories, Aisles, Platforms, resurfacing, leveling and repairing old floors, and as a filler or subfloor under other materials

This material is applied in a plastic condition, spread with a trowel, usually about $\frac{1}{2}$-in. thick (but can be spread from feather edge to several inches thick) and forms a long wearing asphaltic surface similar to cement but more ductile, more resilient, easier under foot, and indefinite in ultimate life.

Descriptive folder giving full details and specifications for installation will be furnished on request.

HACHMEISTER-INC.

Manufacturers and Contractors for Floors of Mastic, Magnesite and Rubber

FACTORY AND GENERAL OFFICES
2332-2338 Forbes Street, PITTSBURGH, PA.

REGISTERED CABLE ADDRESS:
"HAKO" PITTSBURGH

REPRESENTATIVES IN PRINCIPAL CITIES

Types of Hako Floors

HAKO MASTIC TILE.
HAKO MAGNESITE COMPOSITION.
HAKO MAGNESITE TERRAZZO.
HAKO HOT and COLD MASTIC.
HAKO HOT ASPHALT.
HAKO EMULISIFIED ASPHALT.
HAKO RUBBER TILE.

Hachmeister Organization and Service

Hachmeister's highly trained corp of Flooring Engineers are always at your service for consultation. Their long years of experience qualify them to offer expert advice on flooring problems.

Millions of feet of Hako Floors of all types have been installed during our many years of service to the Architectural Profession, and we can point with pride to these installations—in prominent buildings in important cities—as examples of beauty, durability and economy.

Here Are Just a Few of the Many Outstanding Hako Floor Installations

Internal Revenue Building, Washington, D. C.
Hall of Science, Century of Progress, Chicago, Ill.
Gulf Refining Co., Research Laboratory, Harmarville, Pa.
Bell Telephone Company Building, Cincinnati, Ohio
Boggs & Buhl Department Store, Pittsburgh, Pa.
Allegheny County Home and Hospital, Woodville, Pa.
Ohio State University, Columbus, Ohio
Cornell University, Ithaca, N. Y.
Syracuse University, Syracuse, N. Y.
University of Buffalo, Buffalo, N. Y.
Koppers Stores, Incorporated, Pittsburgh, Pa.
Cresson State Sanitarium, Cresson, Pa.
First Presbyterian Church, Johnstown, Pa.
First Baptist Church, Washington, Pa.
Monroe County Home, Rochester, N. Y.
Allegheny County Jail, Pittsburgh, Pa.
Mehary Medical College, Nashville, Tenn.
Jones & Laughlin Steel Co.
Firth-Sterling Steel Co.
Kroger Grocery & Baking Co. Stores
G. C. Murphy Co. Stores
Meadow Gold Dairies, Inc.
Pennsylvania State Highway Garages

Hako Flooring Materials and Installations Are Guaranteed

All Hako Flooring materials when used in strict compliance with directions and when laid over approved surfaces are fully guaranteed by HACHMEISTER-INC.

Convenience of Hako Installations

A vast number of Hako commercial installations are made without interference to the client's regular business and always at the convenience of the client.

Attributes of Hako Mastic Tile Floors

A large variety of colors are offered—plain or marbleized. Installed in an almost endless combination of designs. Beautiful, durable, economical. Resilient, quiet under foot, and sanitary. Acid, alkali and water resisting. Made in all standard sizes and in three thicknesses ⅛, 3/16 and ¼ in. They will not sustain combustion. Laid over approved cement or wood sub-floors.

Hako Magnesite Composition Floors

This attractive and economical floor is installed in plastic form to a thickness of ½ in., over approved wood or concrete sub-floors. It forms a sanitary, quiet and durable floor. Fireproof. Comfortable under foot. Laid in attractive color combinations and with sanitary coved base if desired. Can be put in service twenty-four hours after installation.

Hako Magnesite Terrazzo Floors

Because of magnesite being employed instead of ordinary cement as a binding medium it is now practical to lay Hako Terrazzo lighter and thinner than is possible with portland cement. Our terrazzo is laid in ½-in. thickness on a ¼-in. prepared base of metal lath embedded in magnesia cement. Any desired separation of color is possible and the most intricate design may be reproduced after having been outlined with sturdy dividing strips of brass.

Hako Rubber Flooring

An assortment of beautiful colors are available in either plain or marbleized effects. Laid with a special waterproof cement over prepared and approved sub-floors.

Specifications, Quotations and Samples

Specifications and samples will be sent promptly to architects requesting same or direct to the client if desired. Quotations cheerfully and promptly furnished.

A Hako Marbleized Mastic Tile Floor Recently Installed in This Modern and Beautifully Streamlined Jewelry Store

JOHNS-MANVILLE

EXECUTIVE OFFICES
22 E. 40th Street
NEW YORK, N. Y.

Products

JOHNS-MANVILLE ASPHALT TILE FLOORING.

For the following Johns-Manville products, see File Index: Insulating Board and Insulating Lath; Acoustical Treatment and Sound Isolation; Transite, Flat and Corrugated; Home Insulation; Built-up Roofing; Roof Insulation; Asbestos and Asphalt Shingles; Pipe Covering and Insulation; Asbestos Flexboard and Asbestos Wainscoting; Steeltex for Plaster, Stucco and Brick Veneer; Steeltex Floor Lath; and Transite Walls.

J-M TYPE A AND HEAVY DUTY ASPHALT TILE FLOORING

Johns-Manville Asphalt Tile Flooring, Type A, composed of rectangular tile units of various sizes and colors, provides a resilient, quiet, decorative, long-wearing floor, applicable over practically any smooth and firm underfloor, and particularly adapted to service in every type of commercial or public building.

With the great variety of plain and marbleized colors and innumerable patterns possible, any desired effect is easily obtained—bright and cheerful, dark and rich, gay or unobtrusive. The harmony of the extensive line of colors permits them to be used together with the utmost freedom in any pattern or combination selected, with the assurance that the resulting effect will be pleasing to the eye and perfectly suitable, whatever the scheme of interior decoration or location.

Since the mottling of no two tile in the same color combination is exactly alike, a floor laid with J-M Marbleized Tile shows a freedom from repetition which is usually lacking in marbleized designs. Borders and feature strips are also available to make possible an almost limitless number of distinctive flooring designs.

A beautiful J-M Asphalt Tile Floor at the Enrico & Paglieri Restaurant, New York City

The first cost of a J-M Tile Floor compares favorably with other resilient floor coverings of the same thickness, while its toughness, resistance to abrasion and maintained durability under the hardest usage has been proved in thousands of installations over many years of service.

J-M Tile Flooring, when laid, is fire-retardant and has been officially approved for use in fireproof buildings in many large cities throughout the country, notably New York where the fire laws are unusually stringent.

The resiliency of J-M Tile Flooring makes for quiet foot traffic. It is also a safe floor, because the surface does not wear slippery. It is odorless, non-absorbent and will not originate dust. This, with its ease of cleaning, makes it particularly adapted to locations where high sanitary standards must be maintained, such as hospitals, schools and sanitariums. The tiles do not buckle, curl or oxidize on contact with water and proper cleaning agent. Barring exceptional abuse, J-M Asphalt Tile requires no attention or expense for maintenance beyond ordinary cleaning.

When excessive abuse or severe accident makes a repair necessary, new tiles can be easily inserted to replace the old. The pattern can be readily extended as partition removals or office changes require.

J-M Type A Tile Flooring

Type A Tile are manufactured in the following standard sizes and colors, in ⅛ and $\frac{3}{16}$-in. thicknesses:

3x 3 in.	9x 9 in.	12x12 in.
3x 6 in.	9x18 in.	12x24 in.
6x 6 in.	9x27 in.	18x24 in.
6x12 in.		

Plain Colors	*Marbleized Colors*
No. 1 Black	No. 101 White on Ivy Green
No. 2 Mahogany	No. 102 White on Black
No. 3 Red	No. 103 White, Yellow on Rose
No. 4 Brown	No. 104 Terra Cotta, Yellow on Mahogany
No. 5 Olive Green	No. 106 Black, White, Green on Gray
No. 11 Tan	No. 107 White on Green
No. 12 Terra Cotta	No. 108 Buff on Mahogany
No. 13 Ivy Green	No. 111 Black, White on Gray
No. 14 French Gray	No. 112 White, Green on Black
No. 21 Buff	No. 115 Ivy Green, White on Green
No. 22 Rose Taupe	No. 116 Dark Brown, Orange, Gold on Cream
No. 23 Emerald	
No. 24 Pearl Gray	No. 118 Red, Gold on Black
No. 31 Dark Blue	No. 119 White, Gold on Red
No. 32 Light Blue	No. 120 White, Green on Olive Green
	No. 121 White, Gold on Terra Cotta
	No. 122 White on Brown
	No. 123 Brown, White on Beige
	No. 124 White, Blue on Dark Blue
	No. 125 White, Blue on Light Blue

Weight per square foot: $\frac{3}{16}$-in. thick—1.8 lbs.; ⅛-in. thick—1.2 lbs.

J-M Flexible Composition Base is furnished in black, brown and mahogany only, 6x36 in., ⅛-in. thick, with floor lip either ⅛ or $\frac{3}{16}$ in. thick, for use with Type A Tile. Cove Base of the same material as Type A Tile, in units 6x18 in., $\frac{3}{16}$-in. thick, is also available in all plain colors. Other materials ordinarily used to form a base may also be used with J-M Tile Flooring.

J-M Heavy Duty Tile

J-M Heavy Duty Tile will give more satisfactory service than other resilient floor surfacing where ex-

posed to extremely heavy foot traffic or where damp conditions prevail.

Heavy Duty Tile have an additional advantage, from a construction standpoint, in that they can be applied directly to smooth wood subfloors without the leveling course usually necessary.

Furnished in ¼-in. thickness only, in the following colors:

Plain Colors	*Marbleized Colors*
Black	No. 201 Rose on Black
Red	No. 202 Red on Black
Brown	No. 203 Gray on Black
Mahogany	No. 204 Green on Black
	No. 205 Buff on Black

Standard sizes: 9x9, 9x18, 12x12 and 12x24 in.

Weight per square foot, approximately 2.3 lbs.

Approved Flooring Contractors

As a satisfactory job results only when good materials are correctly laid, Johns-Manville has appointed Approved Flooring Contractors throughout the country, basing these appointments on thoroughness of workmanship and financial responsibility.

SPECIFICATIONS FOR J-M ASPHALT TILE FLOORING

Work Included

The work contemplated under this specification shall include all materials, labor, equipment and services necessary for and reasonably incidental to the installation of Johns-Manville Asphalt Tile Flooring *(state whether "Type A" or "Heavy Duty")* to *(state in detail surfaces to be covered)* as shown on drawings or herein specified.

(Omit either or both of the following, if not to be used:)

The installation of an approved underlayment shall be included.

A cove base shall be included.

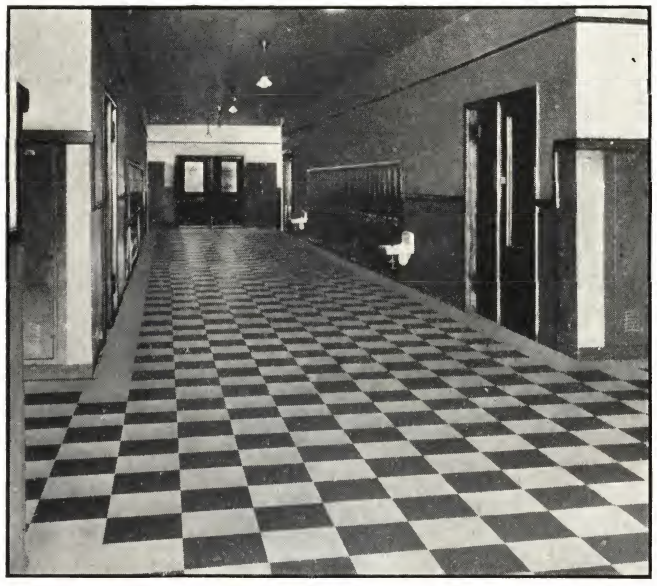
Work Not Included

The following work will be furnished and installed as specified under other divisions of the specifications, which this contractor shall read to ascertain what is called for therein:

(a) *(Include if underfloor is to be concrete.)*

A concrete underfloor which shall have a top layer thick enough to prevent cracking or separation from the sub-base

J-M Asphalt Tile are ideal for large areas
Beautiful effects, such as shown in this church, are readily achieved with J-M Asphalt Tile Flooring



J-M Asphalt Tile
Now the standard flooring for corridors and many other places in schools. It meets every requirement

structure, steel-troweled to a smooth finish free from waves and irregularities, and finished to a point below the required floor level equal to the thickness of the tile flooring specified. The underfloor shall not be treated with hardeners, paint or surface coatings of any kind and shall not have lines struck therein. It shall be free from frost or the effects of freezing, and shall be left dry and clean.

(b) *(Include if underfloor is to be wood.)*

For Type A tile, a wood underfloor which shall be firm and level and which shall be finished to a point below the required floor level equal to the thickness of the tile flooring and the leveling course specified.

Heavy Duty tile may be laid directly on suitable wood floors.

(c) *(Include if stair treads or platforms are involved.)*

A metal nosing on stair treads and platforms recessed the exact thickness of the tile flooring specified so that such flooring will finish to the top of the nosing.

Connecting Work

This contractor shall examine all surfaces on which, or against which, his work is to be applied and shall notify the architect in writing of any defects which he considers detrimental to the installation of his materials.

Schedule

It is suggested that, particularly on large jobs, the specification contain a schedule indicating the following: A: Room name or number. B: Size and thickness of tile units. C: Color and arrangement of field tile. D: Color of border tile. E: Color of cove base, if included. F: Type of underfloor, (concrete, wood, etc.)

Materials

All Asphalt Tile Flooring, Tile Cement (and where specified, Tile Cove Base) referred to in these specifications shall be those manufactured by JOHNS-MANVILLE and shall bear the manufacturer's label. The thickness of the tile, size, colors, etc., shall be as specified.

Installations

All Asphalt Tile Flooring shall be installed by a tile flooring contractor approved by JOHNS-MANVILLE, and in strict accordance with the manufacturer's application directions. Upon completion, the surface shall be thoroughly cleaned.

(If Type A tile are to be applied over wood underfloor, include the following paragraph.)

The wood underfloor shall be overlaid with an approved leveling course (underlayment) laid in accordance with the manufacturer's specifications.

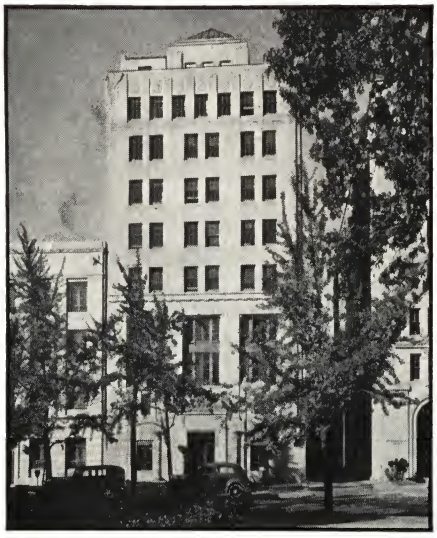
(If J-M Tile Cove Base is to be used.)

The tile cove base shall be installed in strict accordance with the manufacturer's application directions.

For Representative Installations, see pages 3 and 4

Pure Oil Building, Chicago, Ill.

Mary Harkness Hall, Connecticut Women's College, New London, Conn.



Brookings Institute, Washington, D. C.

A FEW REPRESENTATIVE INSTALLATIONS OF JOHNS-MANVILLE ASPHALT TILE FLOORING

Colleges

Ursuline College
Santa Rosa, Calif.
University of California
Berkeley, Calif.
Youngstown College
Youngstown, Ohio
Georgetown University
Georgetown, Md.
Connecticut Women's College
New London, Conn.
Wells College
Aurora, N. Y.
Middlebury College
Middlebury, Vt.
Mills College
Oakland, Calif.

Catholic University, Washington, D. C.

Schools

Berkeley County High School
Berkeley, Calif.
George Washington High School
San Francisco, Calif.
Wampum School
Wampum, Pa.
Cedar Grove School
Shreveport, La.
West End High School
San Antonio, Texas
William Wilson School
Mount Vernon, N. Y.
District 3 Grammar School
Rye, N. Y.
Low Heywood School
Shippan Point, Stamford, Conn.
Englishtown School
Englishtown, N. J.
Haworth School
Haworth, N. J.
Melrose High School
Melrose, Mass.
Forest Park Junior High School
Fort Worth, Texas
Jenning Ave. Junior High School
Fort Worth, Texas
St. James School
Hagerstown, Md.

Quaker Ridge School, New Rochelle, N. Y.

Hospitals

St. Elizabeth Hospital
Youngstown, Ohio
Eye, Ear, Nose and Throat Hospital
Pittsburgh, Pa.
New Martinsville Hospital
New Martinsville, W. Va.
Ohio Valley Hospital
Wheeling, W. Va.
Bellaire Hospital
Bellaire, Ohio
Eitel Hospital
Minneapolis, Minn.
Abbott Hospital
Minneapolis, Minn.
Naeve Hospital
Albert Lea, Minn.
Highland Clinic
Shreveport, La.
City Memorial Hospital
Nacogdoches, Tex.
Maryland Tuberculosis Sanitarium
Sanitarium, Md.
Highland Sanitarium
Shreveport, La.
Tripler Hospital
Hawaiian Islands
Flint-Goodrich Hospital
New Orleans, La.
Middlesex Hospital
New Brunswick, N. J.
New York Hospital
New York, N. Y.
Mount Sinai Hospital
New York, N. Y.
St. James Riverside Hospital
Yonkers, N. Y.
Physicians' Hospital
Jackson Heights, L. I., N. Y.
New Jersey State Hospital
Marlboro, N. J.
Washington County Hospital
Hagerstown, Md.
Freedmans Hospital
Washington, D. C.
Bolling Field Hospital
Washington, D. C.
Jordan Hospital
Highland Park, Mich.
U. S. Veterans Hospital
Jefferson Barracks, Mo.
Veterans Hospital
American Lake, Wash.

Children's Hospital Bldg., State Tuberculosis Hospital, Sanitarium, Tex.

Acacia Mutual Life Insurance Company, Washington, D. C.

A FEW REPRESENTATIVE INSTALLATIONS OF JOHNS-MANVILLE ASPHALT TILE FLOORING

Churches

Hennepin Ave. M. E. Church
Minneapolis, Minn.
St. Anthony Church
Brown's Valley, Minn.
St. Johns's Lutheran Church
Good Thunder, Minn.
Holy Rosary Church
Houston, Tex.
Church of the Immaculate Conception
Houston, Tex.
St. Paul's Methodist Church
Houston, Tex.
Keller Memorial Church
Washington, D. C.
Overlea Baptist Church
Overlea, Md.
Church of the Latter Day Saints
Berkeley, Calif.
Christ Church, Methodist Episcopal
60th St. and Park Ave., New York
First Church in Malden
Malden, Mass.
Ruggles St. Baptist Church
Boston, Mass.

Banks

Bank of America
San Francisco, Calif.
Monterey County Bank
Greenfield, Calif.
National City Realty Co.,
Compound Interest Dept.
New York, N. Y.
First National Bank
Shreveport, La.

Office Buildings

Tilden Sales Bldg.
San Francisco, Calif.
Financial Centre Bldg.
San Francisco, Calif.
Balfour Bldg.
San Francisco, Calif.
California Commercial Union Bldg.
San Francisco, Calif.
Metropolitan Bank Bldg.
Minneapolis, Minn.
Federal Reserve Bank Bldg.
Minneapolis, Minn.
La Salle Bldg.
Minneapolis, Minn.
First National Soo Line Bldg.
Minneapolis, Minn.
Guardian Life Bldg.
St. Paul, Minn.
Pere Marquette Bldg.
New Orleans, La.
Atlas Bldg.
Shreveport, La.
Union Planters Bank Bldg.
Memphis, Tenn.
Gulf, Colorado & Santa Fe Bldg.
Galveston, Tex.
Acacia Mutual Life Ins. Bldg.
Washington, D. C.
Fruit Growers Express Bldg.
Washington, D. C.
Stanislaus County Fire Ins. Bldg.
Modesto, Calif.
Public Service Bldg.
Paterson, N. J.
G. W. Paterson Bldg.
Fresno, Calif.
McGraw-Hill Bldg.
New York, N. Y.
Herald-Traveler Bldg.
Boston, Mass.
Fox Film Bldg.
Memphis, Tenn.
Glasser Bldg.
Paterson, N. J.
State Board of Health Bldg.
(Division of Sanitation)
St. Paul, Minn.

Miscellaneous

Academy of Science
San Francisco, Calif.
State Capitol
St. Paul, Minn.
Dallas Public Library
Dallas, Tex.
WBA Radio Station
Annapolis, Md.
Lualualei Radio Station
Oahu, Hawaiian Islands
Embassy Hotel
San Francisco, Calif.
Chevy Chase Country Club
Washington, D. C.
Public Library
San Francisco, Calif.
City Hall
Seguin, Tex.
Brookings Institute
Washington, D. C.

First Church, Malden, Mass.

Melrose High School, Melrose, Mass.

New York Hospital, New York, N. Y.

McMillian Hall, Wells College, Aurora, N. Y.

ESTABLISHED 1899

DAVID E. KENNEDY, INC.

Kennedy Resilient Tile Floors

58 Second Avenue, BROOKLYN, N. Y. (Factory and Executive Offices)

SALES OFFICES:

CHICAGO, ILL.—30 No. Michigan Avenue
NEW HAVEN, CONN.—P. O. Box 927
ATLANTA, GA.—Bona Allen Bldg., 133 Luckie Street
LOS ANGELES, CALIF.—121 No. Larchmont Boulevard

Responsible Flooring Contractors in Principal Cities

Kennedy Products

Kentile (Asphalt tile for floors and walls)
Kencork (Cork flooring with square and bevelled edges for floor and walls)
Rubber Tile (Hood rubber tile and wall covering)
Kencor Bulletin Boards (Cork bulletin boards)
Flex-O-Base (Flexible asphalt cove base)

Kennedy Service and Plant

David E. Kennedy, Inc., introduced the first resilient tile flooring (cork tile) in 1899. Our new factories are most modern and one of the largest of their kind. Our experience gained in the manufacturing and installing of 75,000,000 square feet of these floors is at your service. Kennedy floors are installed by approved flooring contractors who have been trained by us for years, many over twenty years. These flooring contractors constitute one of the largest and most efficient organizations for the installation of resilient tile floors in the world.

Specification for Kentile

All finished floors in (enumerate spaces) shall be of **Kentile**, manufactured by David E. Kennedy, Inc., Brooklyn, N. Y., and installed by its approved flooring contractor. Thickness shall be $\frac{3}{16}$" (also available in $\frac{1}{8}$" and $\frac{1}{4}$" thickness). **Kentile** shall be composed entirely of inert materials, with necessary blending agents. The major ingredients shall be asphalt of high melting point, clean asbestos fibre, inert filler and pure mineral pigments. All tile shall have a calendered surface; contain no sand, grit, or vegetable rubber; to be equal in all respects to samples held by the architect, with the same factors of ductility, hardness, non-absorbence, resistance to acids, alkalies and water; shall be free from lumps and unmixed coloring matter.

The designs shall be as follows: (It is well to mention the size of tile and **Kentile** colors, for the price varies according to the color and size of tile selected. Standard sizes are 9 x 9", 12 x 12", 6 x 12", 9 x 18", 12 x 24". Samples for color selection will be furnished on request.)

Kentile shall be fastened to concrete backing throughout the entire surface with adhesive as recommended by the manufacturer. Where installed upon a wood backing a layer of 15 lb. saturated felt paper with butt joints shall be cemented over the entire wood floor with linoleum paste. **Kentile** shall be cemented over this felt paper with an adhesive as recommended by the manufacturer.

If a Cove Base Is Desired, Add—Flex-O-Base 6" high (also available in 4" height) shall be furnished and set around walls of all rooms having **Kentile** floors.

If Straight Base Is Desired, Add—Kentile Straight Base 6" high (also available in 4" height) shall be furnished and set around walls of all rooms having **Kentile** floors.

If Waxing Is Desired, Add—After **Kentile** flooring is installed it shall be cleaned with one coat of cleaner as recommended by the manufacturer and then given two coats of wax as recommended by the manufacturer. Last coat of wax to be buffed.

Specification for Kencork
(Cork flooring with square and bevelled edges)

All finished floors in (enumerate rooms) shall be $\frac{5}{16}$" (also furnished in ½" thickness) Kencork with square edges (if bevelled edges desired mention "with bevelled edges"), manufactured by David E. Kennedy, Inc., Brooklyn, N. Y., and installed by its approved flooring contractor. Kencork shall be composed only and wholly of clean cork shavings, compressed in closed steel moulds at 1800 lbs. to the square inch and baked for five hours at a temperature of about 650° F. Weight shall average not less than 20 oz. or more than 23 oz. per sq. ft. for all ½" thick tile and not less than 12½" or more than 14½ oz. per square foot for all $\frac{5}{16}$" tile. Kencork shall be sanded to a fine, smooth finish after installation (omit this sentence if Kencork with bevelled edge is specified).

Field tile shall be 9 x 9". (Can be furnished in any size that is a multiple of 18 x 36". Mention size you wish) with one to three strip straight line borders; shades to be selected by the architect. All flooring shall be of American manufacture.

Kencork shall be fastened to concrete backing throughout the entire surface with adhesive as recommended by the manufacturer. Where installed upon a wood backing, a layer of 15 lb. saturated felt paper with butt joints shall be fastened over the entire wood floor with linoleum paste. **Kencork** shall be cemented over this felt paper with an adhesive as recommended by the manufacturer.

If **Kencork** is to be installed over concrete in contact with the earth, specify a 1:4 cement top finish, and add the following to the aforementioned specification.

All **Kencork** that is to be installed over concrete in contact with the earth shall be of the square edge type of ½" thickness (bevelled edges cannot be used here) and shall be set in a special asphalt compound as recommended by Kennedy with waterproof cement for the joints. Each tile shall be bradded with headless steel brads driven below the surface in accordance with Kennedy's standard instructions.

If Straight or Cove Base Is Desired, Add—Kencork Cove (straight) base 6" high (also furnished in 4" height) shall be furnished and set around walls of all rooms having Kencork floors.

If Kencork Wainscoating Is Desired—Specify thickness, height and rooms in which it is to go.

If a Finish Is Desired—There are two types of finishes for Kencork, a wax finish and Kenseal Finish. Kenseal Finish costs more than wax finish.

Wax Finish—After Kencork is installed it shall be given one coat of sealer and two coats of wax as recommended by the manufacturer. Last coat of wax to be buffed.

Kenseal Finish—After Kencork flooring is installed it shall be given one coat of Kennedy filler, three coats of Kenseal Finish and one coat of Finish Material, all applied in accordance with Kennedy's instructions.

Specifications for Hood Rubber Tile

All finished floors in (enumerate spaces) shall be Hood Rubber Tile furnished by David E. Kennedy, Inc., and installed by its approved Flooring Contractor. Thickness shall be (available in $\frac{1}{8}$", $\frac{3}{16}$" and $\frac{1}{4}$"). Size and color of tile shall be selected from Kennedy's standard colors and sizes. Each tile shall have a uniform thickness and all sides of each tile shall be cut to a true edge. Adhesive for fastening the tile shall be as recommended by the manufacturer.

If Hood Rubber Cove Base Is Desired, Add—Hood Rubber Cove Base 4" high (also furnished in 6" height) shall be furnished and set around walls of all rooms having Hood Rubber Tile Floors.

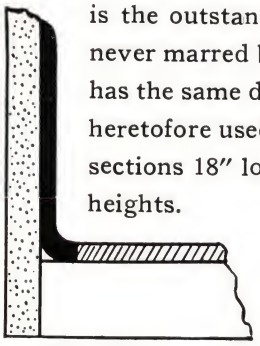
If Waxing Is Desired, Add—After Hood Rubber Tile Flooring is installed it shall be cleaned with one coat of cleaner as recommended by Kennedy and then given two coats of wax as recommended by Kennedy. Last coat of wax to be buffed.

Specification for Kencor
(Cork Bulletin Board)

Furnish and install Kencor Bulletin Boards and chart boards as shown on drawings. Kencor tacking boards shall be furnished above all blackboards as shown on drawings. All Kencor boards shall be of the manufacture of David E. Kennedy, Inc., Brooklyn, N. Y. They shall be of uniform ½" thickness, consisting of sheet cork cemented to a special backing as recommended by the manufacturer. Wood grounds shall be securely set against which to fasten the Kencor Bulletin Boards. The color of the Kencor shall be tan (also furnished in green).

This is the complete range of colors in Kennedy's asphalt tile — Kentile. Naturally these printed reproductions are but poor intimations of the rich, clear colors of the tiles themselves. We will be glad to send actual samples to any architect requesting them on his own letterhead.

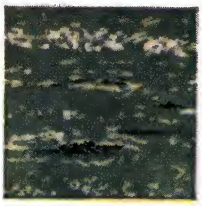
FLEX-O-BASE

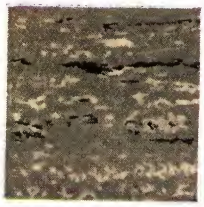


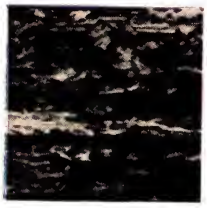
is the outstanding sanitary cove base—is never marred by mop marks or cleaning—has the same durability as expensive bases heretofore used to get flexibility. Standard sections 18″ long. Furnished in 4″ and 6″ heights.

MORENA GREEN (131)

PIASTRA (224)


SEA GREEN (228)


NAPOLEON GRAY (222)

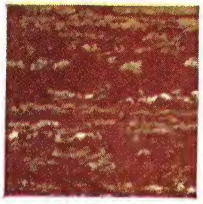

GRAND ANTIQUE (204)

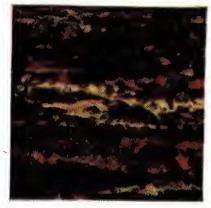
BLACK (102)

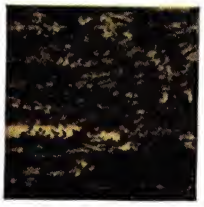
EMERALD GREEN (130)

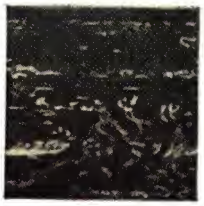
MOROCCO BROWN (104)

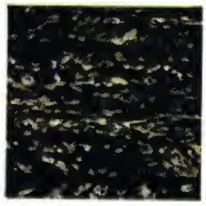
BUFF (127)

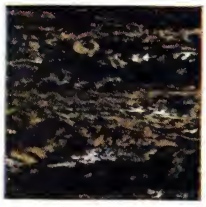

VEINED CARNELIAN (206)


EGYPTIAN PORPHYRY (203)


FAMOSA (226)


GRAY BARDIGLIO (230)


CIPPOLINO (214)


SERPENTINE (229)

JADE GREEN (126)

SUMAC RED (129)

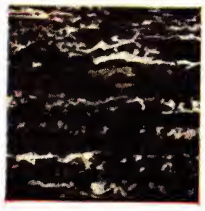
OAK GREEN (105)

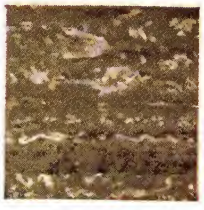
PEACOCK BLUE (122)

WHITE (132)

TOLEDO RED (109)

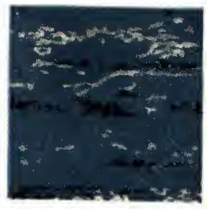
YELLOW VERONA (227)


BROWN LEVANTO (212)


GREEK SKYROS (221)

LIGHT ALGERIA (223)

VERDE ANTIQUE (209)


FLEECY CERULEAN (225)

SCOTCH GRAY (108)

ANDORRA TAN (110)

AZURE BLUE (128)

LEATHER TAN (103)

QUARRY RED (106)

DOVE GRAY (125)

THOS. MOULDING FLOOR MFG. CO.

EXECUTIVE OFFICES
165 West Wacker Drive, CHICAGO, ILL.

NEW YORK, N.Y., Grand Central Terminal Building
PHILADELPHIA, PA., Architects Building
MINNEAPOLIS, MINN., Thorpe Building
DES MOINES, IOWA, Hubbell Building

DISTRICT SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

THE COMPANY

Thos. Moulding has been in the business of manufacturing and installing floors for approximately twenty years. Wide experience and genuine responsibility assure you a dependable job.

The factory, located on the Belt Railroad, Chicago, Ill., is a modern plant with an adequate capacity for both steady and peak demand. It maintains a laboratory, completely equipped for research, and thoroughly tests both raw and finished goods to assure uniformity. THOS. MOULDING FLOOR CO. and other approved flooring contractors contract to install Moultile anywhere in the United States and nearby countries. Skilled mechanics are employed.

MOULTILE—REINFORCED MASTER ASPHALT TILE

Moultile Asphalt Tile is composed mainly of especially selected thermoplastic gums, asbestos and other fibres, and pure, rich, non-fading mineral pigments. Ingredients are thoroughly amalgamated by machine and then calendered into sheets of uniform thickness. These sheets are cold-cut to accurate rectangular sizes with square, clean-cut edges.

Made to Federal Specifications

Moultile is made to Federal Specification No. SS-T-306 which specifies exacting standards of strength, flexibility, size, indentation and thickness.

Adaptability—Moultile is adaptable for use in all types of buildings as a finished floor laid over smooth subfloors. (See next page for subfloor requirements.) Special types of Moultile have been developed to meet special installation conditions.

Moultile can be laid with permanent results over cement resting on the ground. Moultile will permanently bond, does not buckle or loosen and will not rot or decompose. Moultile is laid in an asphalt cement which is affected by neither the alkali nor the dampness ever present in cement floors resting on the ground. It is the solution of the problem of floorings over cement on the ground.

Salient Characteristics

Moultile Is Reinforced—By use of special reinforcing materials and processes all Moultile is reinforced to give maximum strength for this type of material.

Durability—Moultile resists impact and abrasion of traffic over a long period of years. It will endure a lifetime. Its surface is not roughened by friction. It has no appreciable co-efficient of expansion or contraction to cause curling at joints or buckling. It is truly inert and remains permanently bonded to the subfloor, being fastened with an asphaltic cement which is neither affected by the dampness nor alkali, ever present in cement. Ask us for Shedd Aquarium Report: Moultile durability convincingly demonstrated under unusual traffic conditions.

Resilient and Comfortable—There is a resilience and elasticity to Moultile which everyone enjoys, plus the additional comfort factors of non-slipperiness and quiet under foot. These properties are permanent, as the material does not oxidize, dry out, or dust.

Non-absorbent and Sanitary—There is no absorption, no rotting, no odor.

Non-slip—When dry, unless waxed, Moultile is positively non-slip. When wet, it is less slippery than other smooth surface floor materials.

Fire-resistant—Moultile will not support combustion or ignite from the surface.

An Electrical Insulator—A positive electrical non-conductor, Moultile is especially adaptable to areas surrounding electrical equipment.

Attractive Appearance—Colors are permanently clear in tone, of attractive shades, and not subject to fading or deterioration.

Low Maintenance Cost—Properly cared for, Moultile endures a lifetime. Use the following type materials: *For Waxing,* the self-polishing water wax variety. *For Washing,* mild neutral non-caustic soaps. *For Sweeping,* use the special sweeping compound developed by us.

Avoid use of the following: (1) Waxes smelling of turpentine, naphtha, benzine, or gasoline; (2) commercial sweeping compounds; (3) strong alkaline soaps or cleaning powders of any nature.

For your convenience we manufacture a full line of maintenance materials in accordance with above recommendations. *Permagloss*—a self-polishing water wax that produces a rich lustrous finish. *Kleenolene*—a non-caustic liquid soap made by us. *Sweepolene*—which contains no injurious oil (commercial sweeping compounds usually contain oils which will soften and discolor Moultile).

Moultile "Calibrated" to Meet Varying Conditions

Moultile Master Asphalt Tile is now made in a number of special types, each one "calibrated" to suit varying conditions of service.

Moultile "Greaseproof"—For installations where heavy accumulations of oil or grease are likely to occur. It is identical in appearance with Standard Moultile.

Moultile "Acid-resistant"—Highly resistant to chemicals which are harmful to other types of floor covering. Ideal for school and industrial laboratory installation.

Moultile "Flexed"—A softer, more flexible material giving the maximum of resilience and quiet, especially valuable for areas of foot traffic only, such as lobbies, corridors, stairways, and other areas. Also ideal for maximum resistance to the vibration of wood subfloors and for quick conformance to the irregular contours of wood subfloors. Slightly less resistant to indentation, however, than Standard Moultile, from the weights of office equipment, beds, chairs, etc.

Moultile "Tempered"—Specially made to give maximum resistance to desks, chairs, and other fixtures. Ideal for offices.

Moultile "Heavy Duty"—Built to an extra heavy thickness to withstand the abuse of trucking. Ideal for certain factory and warehouse installations.

Moultile "Prewaxed"—All types, thicknesses and colors of Moultile are obtainable with a waterproof wax coating burnished right into the tile at factory. Moultile "Prewaxed" is highly resistant to soap, water and alkali, gives extra durability, and is less slippery than self polishing floor waxes.

Colors

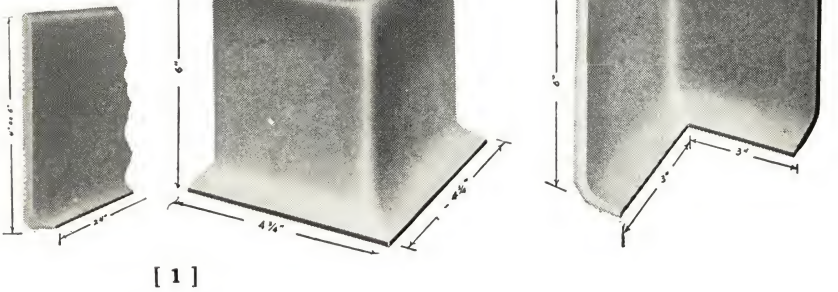
Approximately 60 plain and marbleized shades in browns, black, blues, white, grays, tans, greens, reds, etc. Special colors on request.

Sizes

Moultile is furnished in $\frac{1}{8}$, $\frac{3}{16}$ and $\frac{1}{4}$-in. thicknesses, and in the following sizes: 3x3, 3x6, 4½x4½, 6x6, 6x12, 6x18, 9x9, 9x18, 12x12, 12x24, 18x24 in., and long hexagon.

Moultile Cove Base

Moultile Cove Base is now available to match all colors of Moultile Master Asphalt Tile. It is made in 2-ft. lengths, 4 or 6 in. high, $\frac{1}{4}$ or $\frac{3}{16}$ in. thick at wall face with lip for either $\frac{1}{8}$ or $\frac{3}{16}$-in. tile and with $\frac{3}{8}$-in. radius at cove. Inside corner pieces can also be furnished for the 6-in. height. Moultile Cove Base is flexible, facilitating conformance with wavy walls. It is economical in cost—less than other resilient type bases and compares favorably with wood. As a backing, the smooth plaster finish should be carried to floor level.



THOS. MOULDING ASPHALCRETE — A TREATMENT TO PREPARE CEMENT FLOORS FOR LAYING FLOOR COVERINGS

Asphalcrete is a cushioned filler for smoothing up bumpy, uneven or poorly troweled cement floors to make a suitable foundation for floor coverings, such as asphalt tile, rubber tile, linoleum, etc. It is a successful and economical substitute for cement topping in new construction. The hazards of securing a satisfactory bond with cement topping without resorting to excessive weight and thickness are well recognized by contractors, engineers and architects. Asphalcrete bonds securely in thicknesses even less than ¼ in. without danger of loosening or buckling. It is consequently much cheaper and infinitely more satisfactory for surfacing rough cement.

Asphalcrete is resilient. It also contributes sound deadening qualities not found in cement topping.

Contractors need only screed new cement underfloors in preparing for asphalcrete.

What Asphalcrete Is—A composition of Thos. Moulding Asphalcrete Binder, water, portland cement and torpedo sand mixed in various proportions depending on thickness to be applied. Write for special bulletin giving formulae and application details.

How to Specify Thos. Moulding Asphalcrete — *To Smooth Old Cement Floors*—Uneven, bumpy, or poorly troweled cement floors should be smoothed with Thos. Moulding Asphalcrete, applied to a thickness of .. in., in accordance with manufacturer's instructions.

To Top Cement Floors Not Yet Poured—Leave cement subfloor ⅝ in. low and to a screed finish. Over same apply Asphalcrete in accordance with manufacturer's instructions.

Note: Cement subfloors steel troweled to a hard, smooth finish provide a suitable foundation for Moultile without further treatment.

THOS. MOULDING UNDERLAYMENT—A TREATMENT TO PERFECTLY PREPARE WOOD FLOORS FOR LAYING FLOOR COVERINGS

Underlayment is a light weight plastic cement which may be laid over wood floors in any condition, to provide a perfect foundation for all types of floor covering—asphalt tile, linoleum, mastic, cork tile, rubber tile, linoleum tile.

Underlayment is non-inflammable—materially reduces fire hazard and earns lower insurance rates. It also contributes towards soundproofing wherever used.

What Underlayment Does — *For Old Wood Floors* — Floor coverings laid over old wood floors often fail to give satisfaction by reason of an unsatisfactory condition of underfloor. Thos. Moulding Underlayment corrects defects in old wood floors as follows:

(1) Levels up the uneven wood subfloors.

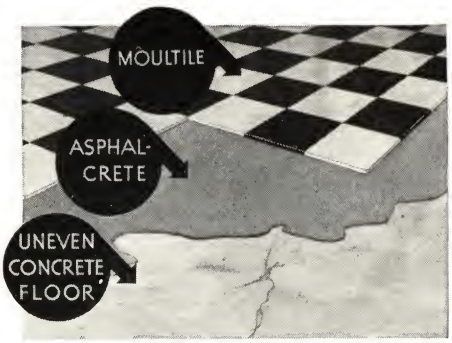
(2) Flows into the open joints—eliminates possibility of joint lines showing through on finished floor covering.

(3) Underlayment is of such strength that it diminishes the spring of springy boards.

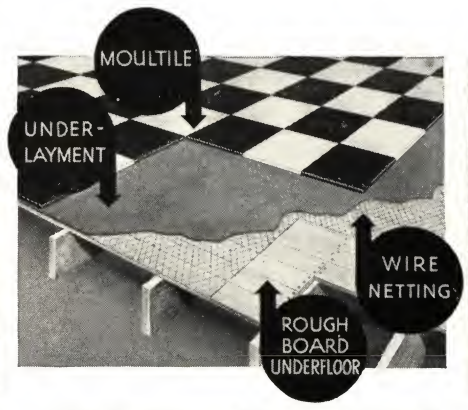
(4) Forms a smooth seamless surface equivalent to a smooth cement floor on which to lay the floor covering.

(5) Will not crumble, buckle, or crack to cause similar defects in finished floor.

St. Agnes Convent, Fond du Lac, Wis. Thos. Moulding Moultile over Asphalcrete on rough cement.—E. Brielmaier & Sons Co., Archts.



This diagram shows how Asphalcrete is used to prepare concrete subfloor for floor coverings.



How Underlayment is applied to rough board underfloor. It may be similarly applied to old or new top matched and dressed wood floors.

For New Construction—New top matched and dressed wood floors, no matter how smooth, level, or tightly jointed, are not a good foundation for floor coverings. Invariably, they soon shrink and curl, causing similar defects in the floor covering. Many a good flooring has been ruined by this action of new wood floors.

The solution is to omit the top dressed and matched floor, and apply Underlayment directly over the rough board underfloor. This procedure plus Moultile usually costs less than finished top floor plus felt and Moultile.

Application—Underlayment can be installed complete in one day and is hard enough to walk on in 24 hours. Not more than 48 hours' time is required for Underlayment to dry sufficiently for application of floor covering. Laid to ½-in. depth, Underlayment weighs approximately 5 lbs. per sq. ft. Other thicknesses weigh in direct proportion.

Underlayment is not carried in stock anywhere, as it should be made for each particular job at the time required. It may be ordered direct from the THOS. MOULDING FLOOR MFG. CO. Orders should be placed 5 days before material is required.

How to Specify Thos. Moulding Underlayment—Thos. Moulding Underlayment shall be applied directly over [old wood top floors] [rough board underfloor] to a thickness of ½ in. in accordance with the manufacturer's instructions.

THOS. MOULDING UNDERCUSHION

Although Thos. Moulding Underlayment is an ideal type of foundation for all floor coverings over wood floors, its expense limits it chiefly to:

(1) New construction where cost of Underlayment directly over a rough board floor plus ⅛-in. Moultile is usually less than the top finished floor plus necessary felt and $\frac{3}{16}$-in. tile over same, and (2) Those cases of old wood floors in such poor condition that there is no solution other than to install a smoothing, leveling reinforced foundation of Underlayment.

This problem then remains: how to treat those existing wood floors where the joints, levels, and firmness are all reasonably good. In such cases, Thos. Moulding Undercushion offers a satisfactory solution at a lower cost than Underlayment.

Thos. Moulding Undercushion is a waterproof asphalt saturated felt paper made to our particular specifications for thickness, strength, and smoothness.

The Undercushion is glued to wood subfloor with same cement that fastens Moultile to the Undercushion.

Before laying Undercushion first nail any loose boards, sand ridges at board joints, and fill whatever wide grooves exist with Asphalcrete (write for specifications). Over the Undercushion so applied install $\frac{3}{16}$-in. Reinforced Moultile in regular manner. Undercushion is also suitable for use on cement to give extra resilience and quiet.

Five-year old Thos. Moulding Moultile Floor applied with Underlayment over old wood floor.

THOS. MOULDING MOULTILE

Reinforced MASTER ASPHALT TILE

Suitable for Every Type of Installation

Social Science Bldg., University of Chicago. 40,000 ft. Moultile in Classrooms and Corridors.
Coolidge & Hodgdon, Architects

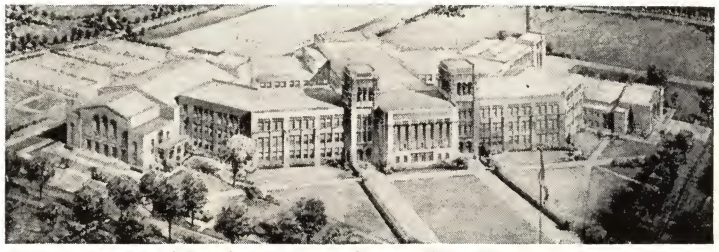
J. C. Penny Store, Salt Lake City, Utah.
35,000 ft. Moultile in Sales Areas.
Gordon Kaufman, Architect

F. W. Woolworth Store, Minneapolis, Minn.
40,000 ft. Moultile in Basement and Other Floors.
Larson & McLaren, Architects

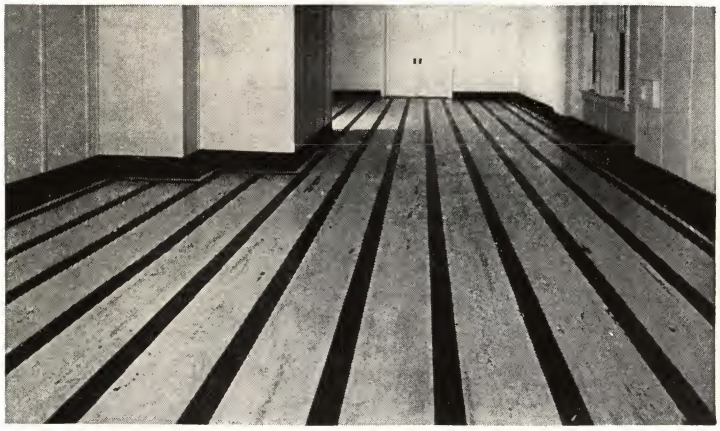
Left to Right—Merchandise Mart; 201 N. Wells Building; Builders Bldg., Chicago. Over 300,000 ft. of Moultile in Offices and Display Spaces.

C. A. Hemphill Home, Kenilworth, Illinois.
Moultile in Basement "Den."

Thos. Edison School, Hammond, Ind. 60,000 ft. Moultile in Classrooms and Corridors over Asphalcrete on Pre-cast Concrete Slab.
Wm. S. Hutton, Architect



Wyandotte School, Kansas City, Kansas.
50,000 ft. Moultile in Corridors and Cafeteria.
Hamilton, Fellows & Nedved, Architects
Joseph W. Radotinsky, Associate Architect



Dancing Instruction Room—Women's Club, Evanston, Ill.
Moultile Prewaxed over Cement on Ground.

THOS. MOULDING "MOULTILE"

Design M—Field Tan Square, Golden Tan Rectangle, Lemon Spot
Border Seal Brown—Tan Strip

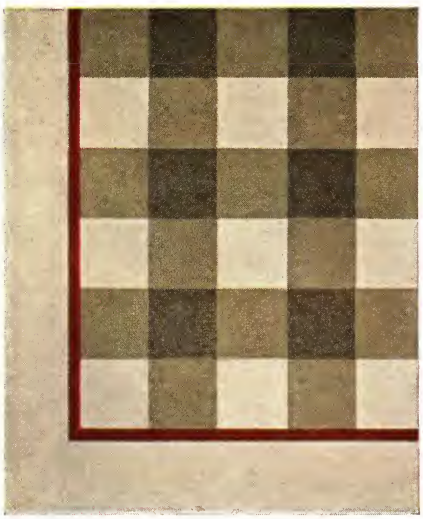
Design N—Field 1—Spot 2
Border 2—Strip Carmine

Design O—Field 9 Grey with 625 Red and 7 Green
Border 603

Design P—Field 27
Border 27—Strip Sand

Design Q—Field 632
Border 632—Strip Black

Design R—Field 646 and 4
Border 646



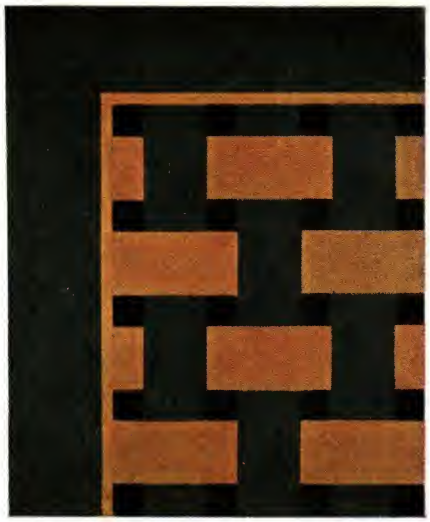
Design S—Field White, Quaker & Gunmetal
Border White—Strip Cardinal

Design T—Field 630 with 44 Red and 609
Border 630

Design U—Field 613 with 632
Border 613—Strip Black

THOS. MOULDING "MOULTILE"

Design V—Field 19 and 14
Border 19—Strip Seal Brown



Design W—Field Jade and Sand with
Cactus Spot
Border Jade—Strip Sand

Design X—Field 26 and 21
Border 26—Strip 16

Design Y—Field Maroon and Carmine
Border Maroon—Strip Quaker

Design Z—Field 17 and 625
Border 17—Strip Seal Brown

Design AA—Field Seal Brown, Cardinal
and Venetian
Border Seal Brown

Design BB—Field 630 with 609 and 8
Border 630

Design CC—Field Seal Brown with
Orange Spot
Border Seal Brown—Strip Orange

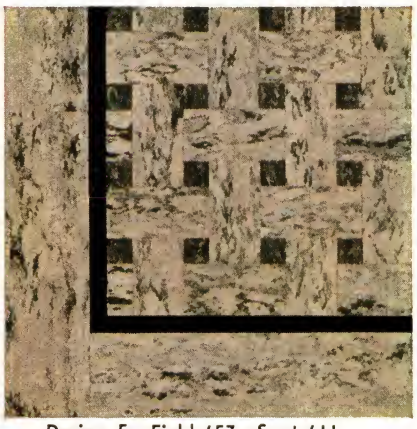
Design DD—Field 611
Border 611—Strip White

Design A—Field 16—Spot 602
Border— 602

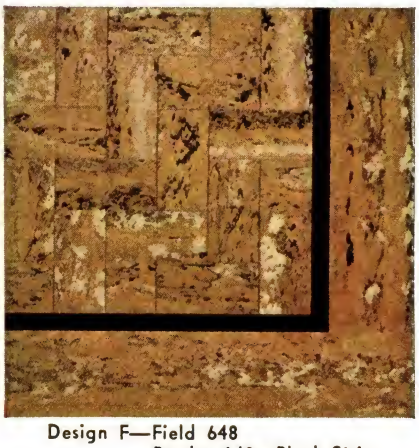
Design B—Field White with Azure
Border Azure—Strip Cardinal

Design C—601 with 32
Border 601—Strip 32

Design D—Field 18—Spot 606
Border—Black

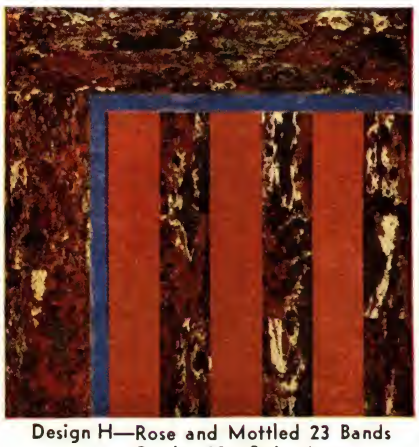


Design E—Field 657—Spot 611
Border 657—Black Strip

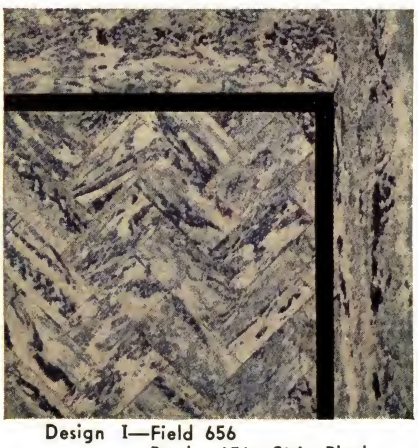


Design F—Field 648
Border 648—Black Strip

Design G—Field Emerald and Sapphire
Border—Black

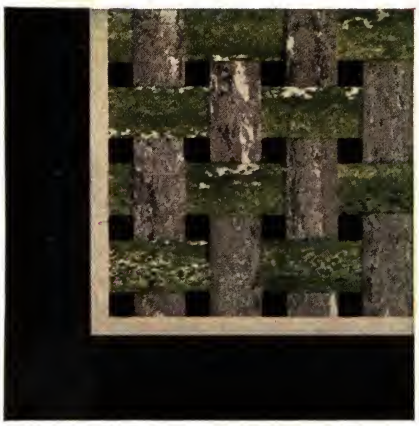


Design H—Rose and Mottled 23 Bands
Border 23—Strip Azure



Design I—Field 656
Border 656—Strip Black

Design J—Field 26 and 27
Border 27—Strip 16



Design K—Field 31 and 32—Spot Black
Border Black—Strip White

Design L—Field 603
Border 603—Strip White

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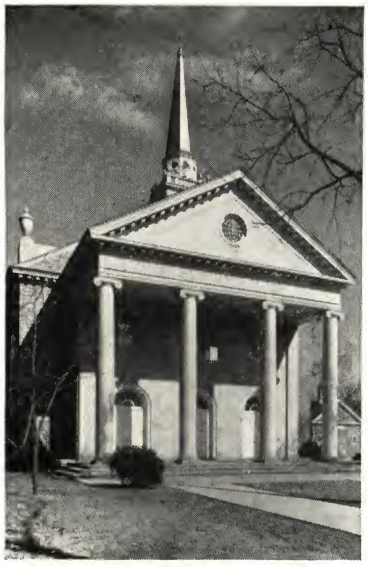
THOS. MOULDING MOULTILE

REINFORCED MASTER ASPHALT TILE

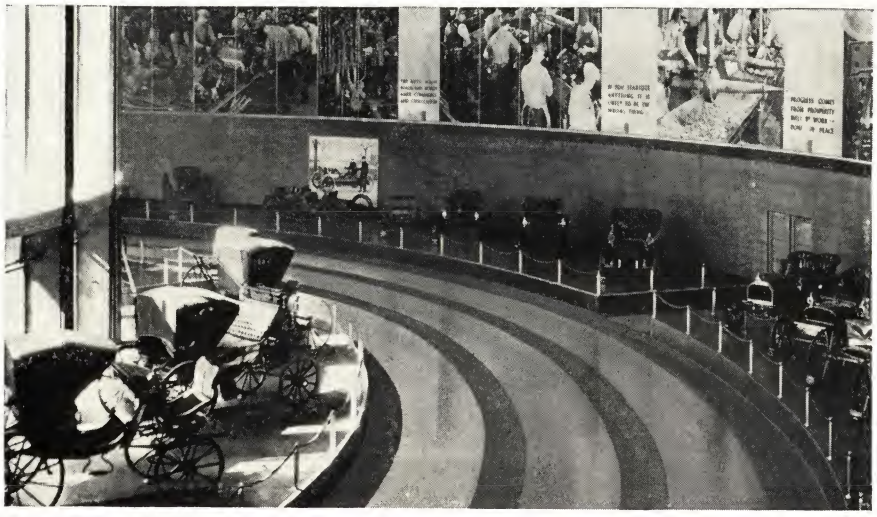
Suitable for Every Type of Installation

Coolidge Public School, Phoenix, Ill.—15,000 Ft. Moultile
BOND-HUBBARD, Architects

Wieboldt Store, River Forest, Ill.—100,000 Ft. Moultile in All Sales Areas
Greaseproof Moultile in meat department
HOLABIRD & ROOT, Architects



Winnetka Congregational Church, Winnetka, Ill.—8,000 Ft. Moultile in Sunday School Areas
AYMAR EMBURY II, Architect
JOHN LEONARD HAMILTON, Assoc. Architect



Ford Building, "A Century of Progress Exposition," Chicago, Ill.—130,000 Ft. Moultile Flexed Over Cement Resting Directly on Ground
ALBERT KAHN, Architect

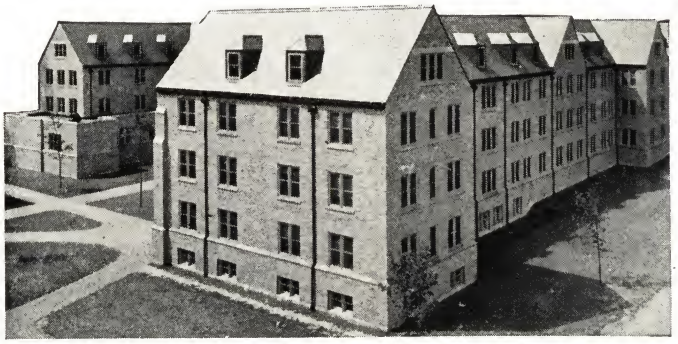
C. A. Hemphill Home, Kenilworth, Ill.—Moultile in Basement Billiard Room

University Housing Project, Atlanta, Ga.—300,000 Ft. Moultile Met Exacting Federal Specification Requirements
EDWARDS & SAYWARD, Architects

THOS. MOULDING MOULTILE

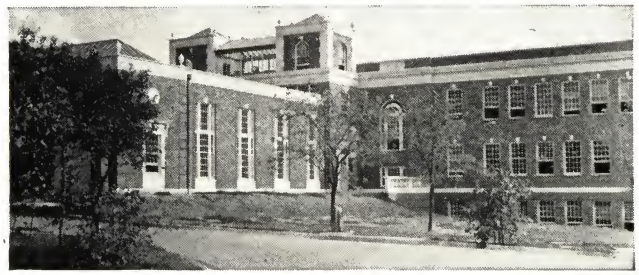
REINFORCED MASTER ASPHALT TILE

Suitable for Every Type of Installation



Cavanaugh Hall, Notre Dame—45,000 Ft. of Moultile Over Asphalcrete, All Areas

MAGINNIS & WALSH, Architects



Science Building, College of Industrial Arts, Denton, Tex.—20,000 Ft. Moultile "Acid-Resistant"

SHIRLEY SIMONS, Architect
PRESTON M. GEREN, Consulting Architect

J. C. Penney Store, Denver, Colo.—30,000 Ft. Moultile Reinforced

EARL MORRIS & FRANK FREWEN, Archts.

Stewart's Department Store, Louisville, Ky.—16,000 Ft. Moultile Over Undercushion on Cement in Basement Sales Room

JOSEPH & JOSEPH, Architects

1st National Bank Bldg., St. Paul, Minn. —60,000 Ft. Moultile in Offices

GRAHAM, ANDERSON, PROBST & WHITE Architects

Other Prominent Installations of Moultile

Kenfield Housing
Buffalo, N. Y.
350,000 ft.

Julia Lathrop Housing
Chicago, Ill.
500,000 ft.

Jane Addams Housing
Chicago, Ill.
400,000 ft.

Dormitory, University of Colorado
Boulder, Colo.
80,000 ft.

Northern State Hospital
Sedro Wooley, Wash.
45,000 ft.

High School
Catskill, N. Y.
40,000 ft.

Ketler Dormitory
Grove City, Pa.
30,000 ft.

Library
Denton, Tex.
35,000 ft.

Roberts School
Indianapolis, Ind.
30,000 ft.

Dormitory, University of West Virginia
Morgantown, W. Va.
70,000 ft.

Notre Dame University
South Bend, Ind.
200,000 ft.

Municipal Building
Oklahoma City, Okla.
50,000 ft.

High School
LaSalle, Peru, Ill.
55,000 ft.

High School
Manitowoc, Wis.
25,000 ft.

Morton High School
Hammond, Ind.
60,000 ft.

Thornton Twp. High School
Calumet City, Ind.
60,000 ft.

U. S. Veterans Hospital
Little Rock, Ark.
70,000 ft.

Hubbell Building
Des Moines, Iowa
35,000 ft.

Grasselli Chemical
Philadelphia, Pa.
10,000 ft.

Decatur School
Decatur, Ill.
50,000 ft.

Keeshin Terminal Offices, Chicago, Ill.—25,000 Ft. Tempered Moultile Over Asphalcrete on Robertson Steel Deck

BALTIMORE & OHIO ENGINEERING DEPT., Architects

Chapel, First M. E. Church, Streator, Ill.—Moultile Over Underlayment on Rough Board Flooring

HERBERT A. BRAND, Architect

Enduring
Beauty in Floors
by
TILE-TEX

RESILIENT Tile-Tex FLOOR TILE

WHAT TILE-TEX IS

The Company

The Corporation has, for many years, been engaged solely in the manufacture of asphalt floor tile and accessories. The personnel represents many years of successful experience in blending and adapting asphalts.

The Company enjoys a strong financial position and offers back of the product a responsibility upon which the architect and his client can confidently depend. References: Dun & Bradstreet, Inc., Chicago, Illinois, and City National Bank & Trust Company of Chicago.

Description

Tile-Tex is composed entirely of inert materials. The major ingredients are natural asphalt and other bitumens of highest melt point and quality, asbestos fibers and pure mineral pigments; these are combined with the necessary blending agents. All raw materials are under complete and competent laboratory control. The knowledge and experience necessary to produce successfully a uniform product are available.

Manufacturing

A well equipped factory operates twenty-four hours per day to meet demand and maintain adequate stocks. Reserve production facilities are provided for emergency periods, insuring prompt shipping and installation service.

The ingredients are thoroughly amalgamated through the medium of heat and pressure and in sheet form are calendered to a uniform thickness. These sheets are cut by a special process to accurate, rectangular tile with sharp, clean edges.

Installation Facilities

Tile-Tex is installed by competent, approved resilient floor contractors located at strategic points throughout the country, aided by the supervision of experienced factory representatives.

Factory representatives are available for localized architectural service.

Tile Thickness

Tile-Tex is made in three standard thicknesses—⅛, 3/16, and ¼ in. Special thicknesses will be made to order, provided such orders are of sufficient size to warrant their production.

Tile Styles

Tile-Tex is furnished in the following shapes and sizes:

Standard sizes—6x12 in., 6x18 in., 9x9 in., 9x18 in., 9x27 in., 12x12 in., 12x24 in., 18x18 in., 18x24 in., and No. 87 Hexagonal (6″ on a side).

Special sizes—3x3 in., 3x6 in., 4x4 in., 4½x4½ in., 4x12 in., and 6x6 in.

Feature Strips—Cut to order in multiples of ½ in. from ½ to 3 in.

Colors

Four lines of colors in Tile-Tex offer a brilliant array of seventy-one plain and marbleized effects. See color charts on following pages.

TWELVE REASONS WHY

1. **Resilience and foot comfort**—Tile-Tex is ideally suited for use where quiet is desired. Its resilience is enduring because no oxidation or hardening is possible. It is extremely comfortable under foot, and a boon to those who must stand all day long.

2. **Durability under severe service**—Tile-Tex floors were first laid twelve years ago. Original installations are still giving good service and will continue to do so for a long time to come. In schools, stores, lobbies and corridors where traffic is severe Tile-Tex will perform admirably.

3. **Proof against moisture**—Tile-Tex, impervious to moisture, can be laid at or below grade on concrete floors that have not been waterproofed for dampness. There is nothing in Tile-Tex that can rot or disintegrate.

4. **Stain and scar proof**—Ink, iodine, and other common sources of stain, have no effect on Tile-Tex Floor Tile. Burning matches or lighted cigarettes leave no permanent scar.

5. **A safe, non-slip surface**—Unlike other types of tile, Tile-Tex is non-slip, even when wet. It provides a safe, sure footing, and for this reason is widely specified for use in schools, stores, offices, and corridors.

6. **Highly fire-resistant**—Tests by Columbia University, New York City, show Tile-Tex to be substantially incombustible. Compared with other types of resilient floor tile it ranks highest as a fire-resistant.

7. **An efficient electrical insulator**—Tile-Tex is also an electrical insulator, having exceptional dielectric strength.

8. **Easy to maintain**—Since the surface of Tile-Tex is so smooth and closely textured it does not originate dust—maintenance is simple and inexpensive. An occasional mopping with mild soap and water is sufficient. Where a wax surface is desired, we recommend the use of Tile-Tex Water Wax.

9. **Colors permanent**—Tile-Tex color and beauty are permanently embedded in each tile.

10. **Harmonious color effects**—The many color combinations possible with seventy-one plain and marbleized effects make it easy to satisfy every taste. Harmony with every color scheme is available. When planning your floor make it beautiful with Tile-Tex.

11. **New, improved flexibility**—Tile-Tex is now manufactured sufficiently flexible for successful application on good wood sub-floors as well as on cement sub-floors. It molds itself to uneven surfaces without fracturing or straining the tile.

12. **Rigid standards of quality**—Tile-Tex is made up to a standard—not down to a price.

THE TILE-TEX COMPANY

CHICAGO HEIGHTS, ILL.

EASTERN SALES OFFICE, 101 PARK AVE., NEW YORK CITY

SPECIFICATION DATA

1. **Material**—shall be Tile-Tex as manufactured by The Tile-Tex Company, Chicago Heights, Illinois. Where special lines of Tile-Tex flooring are required, specify as follows:
   (a) For areas subject to grease and food abuse, specify "Grease-proof Tile-Tex"—(see page 8 for available colors).
   (b) Where wood sub-floors or slightly uneven sub-floors are to receive Tile-Tex, specify "Flexible Tile-Tex"—(available in all Standard and De Luxe colors).
   (c) Where mortar-joint effect is desired, specify "Borderjoint Tile-Tex"—(information sent on request).
   (d) Where acid-resisting floors are required, specify "Economy Tile-Tex"—(see page 8 for available colors).

2. **Scope**—all areas so indicated in schedule of floors or on plans and details.

3. **Foundations (sub-floors)—**
   (a) Over double wood floors.
   These wood floors shall be smooth and sound and top floor composed of strip wood flooring, not wider than 3″, tongue-and-grooved and sanded smooth, nailed tight and free from any springiness. Wood floors shall be subjected to approval of the Tile-Tex contractor before application of Tile-Tex. Installation of Tile-Tex shall be made in strict accordance with the directions of The Tile-Tex Company, and shall include the application of Tile-Tex Felt before application of tile. (Specify Flexible Tile-Tex in $\frac{3}{16}$″ or $\frac{1}{4}$″ thicknesses for use over wood sub-floors.)
   (b) Over single wood floors.
   Install $\frac{1}{2}$″ to $\frac{3}{4}$″ thickness of Tile-Tex Asphalt Floorcote in strict accordance with directions of The Tile-Tex Company. Tile-Tex Asphalt Floorcote shall be applied over expanded metal lath or suitable wire mesh reinforcement nailed to the wood sub-floor.
   (c) Over cement sub-floors.
   Cement sub-floors shall be steel troweled to a smooth finish and free from irregularities, holes, scale, and in all ways suitable to receive Tile-Tex. The cement sub-floor shall be subject to the approval of the Tile-Tex contractor before application of Tile-Tex. Installation of Tile-Tex over cement sub-floors shall be made in strict accordance with the directions of The Tile-Tex Company.
   NOTE: Where cement sub-floors are at grade or below grade, cement sub-floors shall be primed with Tile-Tex Primer before application of tile.
   (d) Over Gypsum Plank or unfinished concrete slab.
   The Tile-Tex contractor shall install $\frac{3}{4}$″ to 1″ thickness of Tile-Tex Asphalt Floorcote in strict accordance with the directions of The Tile-Tex Company. Responsibility for the smoothness and levelness of the Tile-Tex Asphalt Floorcote shall rest upon the Tile-Tex contractor.

4. **Thickness, Colors and Designs.**
   All Tile-Tex shall be ($\frac{1}{8}$″), ($\frac{3}{16}$″), or ($\frac{1}{4}$″) in thickness. All Tile-Tex shall be (Marbleized) or (Plain) and laid according to the schedule and designs for Tile-Tex floors as found in these specifications.

5. **Bases.**
   (a) Where Cove Base is desired, use the following specifications:
   In all areas where Tile-Tex flooring is called for, Tile-Tex Molded Cove Base (6″), (5″), or (3½″) high shall be installed in conjunction with the Tile-Tex flooring, in strict accordance with the directions of The Tile-Tex Company governing the installation of Cove Base.
   (b) Where Straight Base is desired, specify as follows:
   In all areas shown on plans or indicated in Base schedules, install Tile-Tex Straight Base, 5″ high, in strict accordance with the directions of The Tile-Tex Company governing the installation of this type of Base.

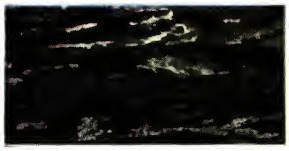
6. **Installation.**
   Installation of Tile-Tex flooring, and/or Floorcote, and/or Cove Base shall be made only by an authorized and approved Tile-Tex contractor.

7. **Guarantee.**
   These floors shall be guaranteed jointly by The Tile-Tex Company and the Tile-Tex contractor against defects in workmanship and materials for a period of one year from date of completion.

NOTE: *Copies of the Layers Handbook, published by The Tile-Tex Company, are available to all architects on request.*

STANDARD COLORS

A complete range of solid and marbleized colors, from black to light gray. This color line can be installed over both wood and cement sub-floors that meet Tile-Tex specifications. Reasonable in cost — flexible — and exceedingly durable.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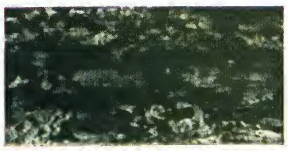
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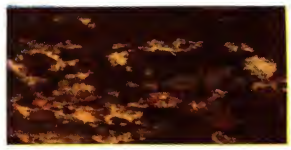
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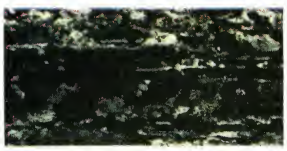
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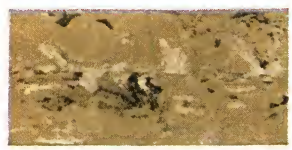
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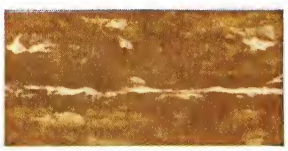
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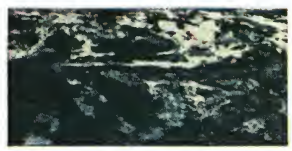
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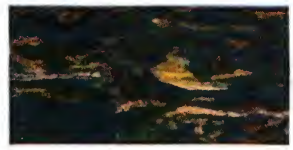
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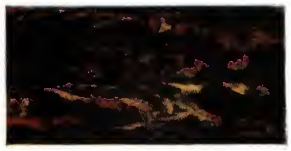
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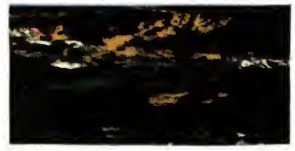
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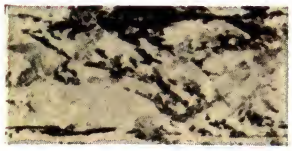
DE LUXE COLORS

COLORS

These colors, nine solid and eleven marbleized, represent the ultimate in intensity, brilliance and variety.

Clear, definite hues such as these are indispensable to the creation of modern floor designs.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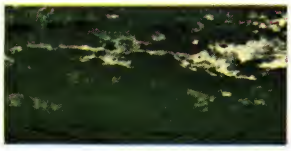
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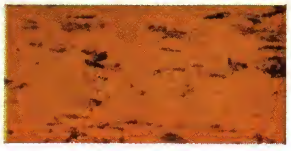
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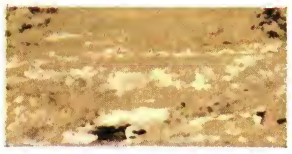
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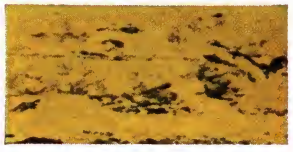
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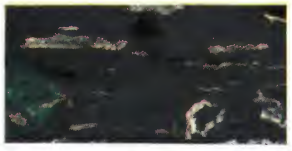
FLEXIBILITY

DeLuxe colors in Tile-Tex possess unusual flexibility, which enables the tile to conform to the irregularities of the average wood or cement sub-floor.

Result—quicker bonding of the tile to the sub-floor plus greater resistance to wear.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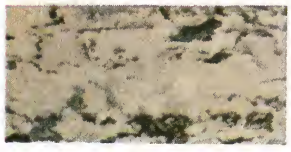
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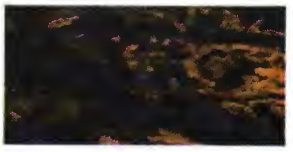
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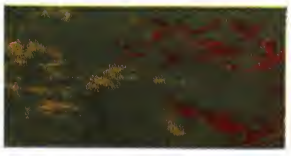
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1011

RUGGEDNESS

The outstanding characteristic of this line is its unflinching resistance to wear and tear.

Despite the brilliance of the colors, these tiles conform in all respects to the rigid requirements of Tile-Tex performance standards.

COST

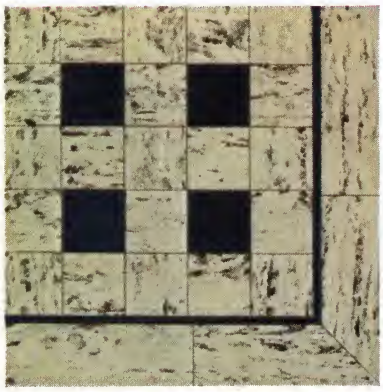
Slightly higher in cost than either Standard or Economy colors, DeLuxe Tile-Tex, nevertheless, can be purchased for considerably less than other floor tile of comparable appearance and quality. Low maintenance expense, due to its exceptionally smooth surface, makes its first cost even less.

EIGHTEEN COLORFUL AND ATTRACTIVE

Design No. 301
Field No. 715—No. 202
Border No. 715

Design No. 302
Field No. 41—No. 47—No. 104
Feature Strip No. 41
Border No. 104

Design No. 303
Field No. 45—No. 49—No. 103
Feature Strip No. 45—No. 103
Border No. 45

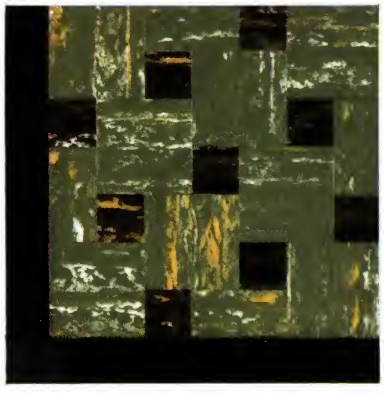


Design No. 304
Field No. 1009—No. 107
Feature No. 107
Border No. 1009

Design No. 305
Field No. 705—No. 713
Feature Strips No. 41—No. 51
Border No. 51

Design No. 306
Field No. 1010
Feature Strip No. 105
Border No. 1010

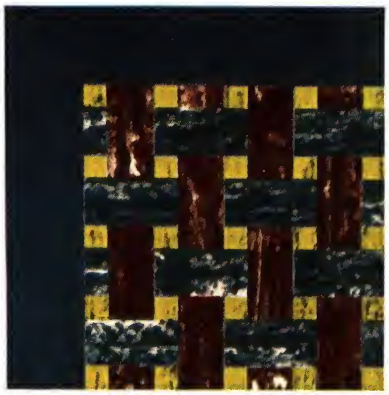
Design No. 307
Field No. 53—No. 43
Feature No. 43—No. 53
Border No. 43



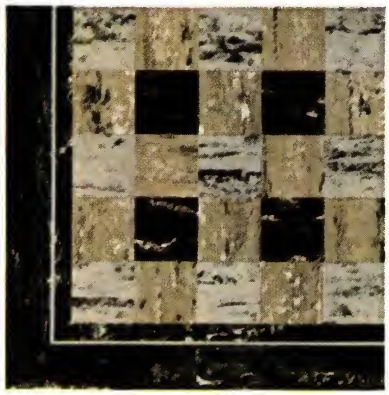
Design No. 308
Field No. 712—No. 728
Border No. 41

Design No. 309
Field No. 42—No. 48—No. 51
Feature No. 42—No. 48
Border No. 48

DESIGN SUGGESTIONS IN TILE-TEX FLOORING



Design No. 310
Field No. 707—No. 1003—No. 1013
Border No. 106

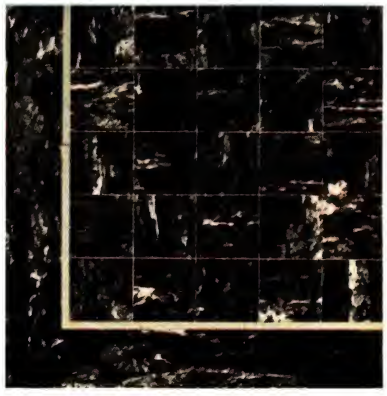


Design No. 311
Field No. 708—No. 716—No. 1009
Feature No. 708—No. 109
Border No. 708

Design No. 312
Field No. 707—No. 729—No. 1014
Feature Strips No. 729—No. 707—No. 1014
Border No. 707

Design No. 313
Field No. 701—No. 716—No. 1012
Feature Strips No. 41—No. 109
Border No. 41

Design No. 314
Field No. 104—No. 108
Feature Strips No. 41—No. 42—No. 104
Border No. 42



Design No. 315
Field No. 708
Feature Strip No. 109
Border No. 708

Design No. 316
Field No. 45—No. 104—No. 108
Feature Strip No. 43
Border No. 45

Design No. 317
Field No. 708—No. 716—No. 101—No. 1009
Feature Strips No. 101—No. 109
Border No. 708

Design No. 318
Field No. 51—No. 41
Border No. 41

ECONOMY COLORS

201

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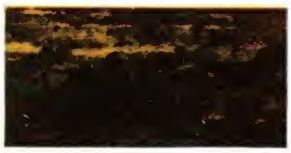
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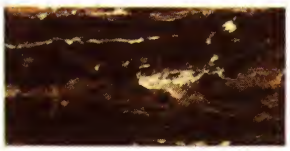
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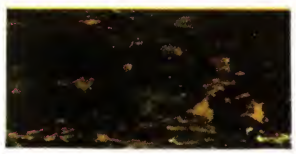
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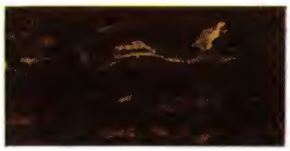
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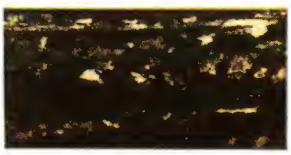
23

26


206

This color group is the Tile-Tex answer to the demand for a high quality, super-rugged tile at minimum cost. We have spared no effort in making this range of colors as varied as possible within the narrow limitations of low cost.

Institutions, such as schools, hospitals, asylums, homes for the aged, both private and governmental, have found in Economy Tile-Tex colors a flooring that stretches their floor dollar. Stores with short leases, factory offices, storage areas, and chemical laboratories are other places where Economy colors are well qualified to give maximum value on a minimum investment.

GREASE-PROOF TILE-TEX COLORS

91

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93

97

Ordinary floor tile of the asphalt type will not withstand extraordinary conditions created by excessive grease and food spillage, common in hotel, club, and restaurant kitchens. Designed to stand the gaff in such areas, Grease-proof Tile-Tex is not only proof against grease but possesses more than average durability and long life.

94

95

In addition to public service kitchens, filling stations, garage offices, bakeries, and butcher shops are places where Grease-proof Tile-Tex should be used.

The seven attractive solid colors shown here more than meet the decorative requirements of such areas.

96

TILE-TEX MOLDED COVE BASE

Tile-Tex Molded Cove Base is designed for installation in conjunction with Tile-Tex Floor Tile and is made 3½ in., 5 in., and 6 in. high, with the following other dimensions: ¼-in. thickness; ½-in. radius at cove; made to about ⅛-in. and 3/16-in. thick floor tile.

Tile-Tex Cove Base has a grooved or ribbed back surface insuring permanent adhesion to the wall. A smooth plastered wall, or Portland cement surface, provides a satisfactory backing.

Molded Corner Pieces for inside and outside corners are available in the 6″ high Base and should be used where necessary to insure a presentable looking job free from handmade miters.

Tile-Tex Molded Cove Base is sanitary in every respect and makes possible the easy and economical cleaning and mopping of floors. The thick ¼-in. wall and ½-in. radius at the cove insure a sturdy, stable base that will stay in place.

TILE-TEX STRAIGHT BASE

Due to the demand for a Base of this type, we are now in a position to furnish Tile-Tex Straight Base, which is made 5 in. high and ¼-in. thick. This Base is a replica of Tile-Tex Molded Cove Base except that the cove at the floor is omitted.

•

SPECIFICATION DATA

(For specifying in conjunction with Tile-Tex flooring, see specifications on page 3. These specifications cover Tile-Tex Bases only.)

Material—Where Cove Base and/or Straight Base is required in conjunction with flooring, same shall be Tile-Tex Molded Cove Base (6″), (5″), or (3½″) high and/or Tile-Tex Straight Base 5″ high, in colors as designated in the schedule for Base finishes.

Corners—Inside and Outside Corner Pieces shall be used by the contractor installing 6 in. Tile-Tex Molded Cove Base at all places where necessary.

Installation—All Tile-Tex Cove Base and/or Straight Base shall be installed prior to the installation of floor tile, in strict accordance with the directions of The Tile-Tex Company.

Guarantee—Tile-Tex Cove Base and/or Straight Base shall be guaranteed jointly by The Tile-Tex Company and the Tile-Tex contractor against defects in workmanship and materials for a period of one year from date of completion.

WALLS
TILE-TEX
FLOORS

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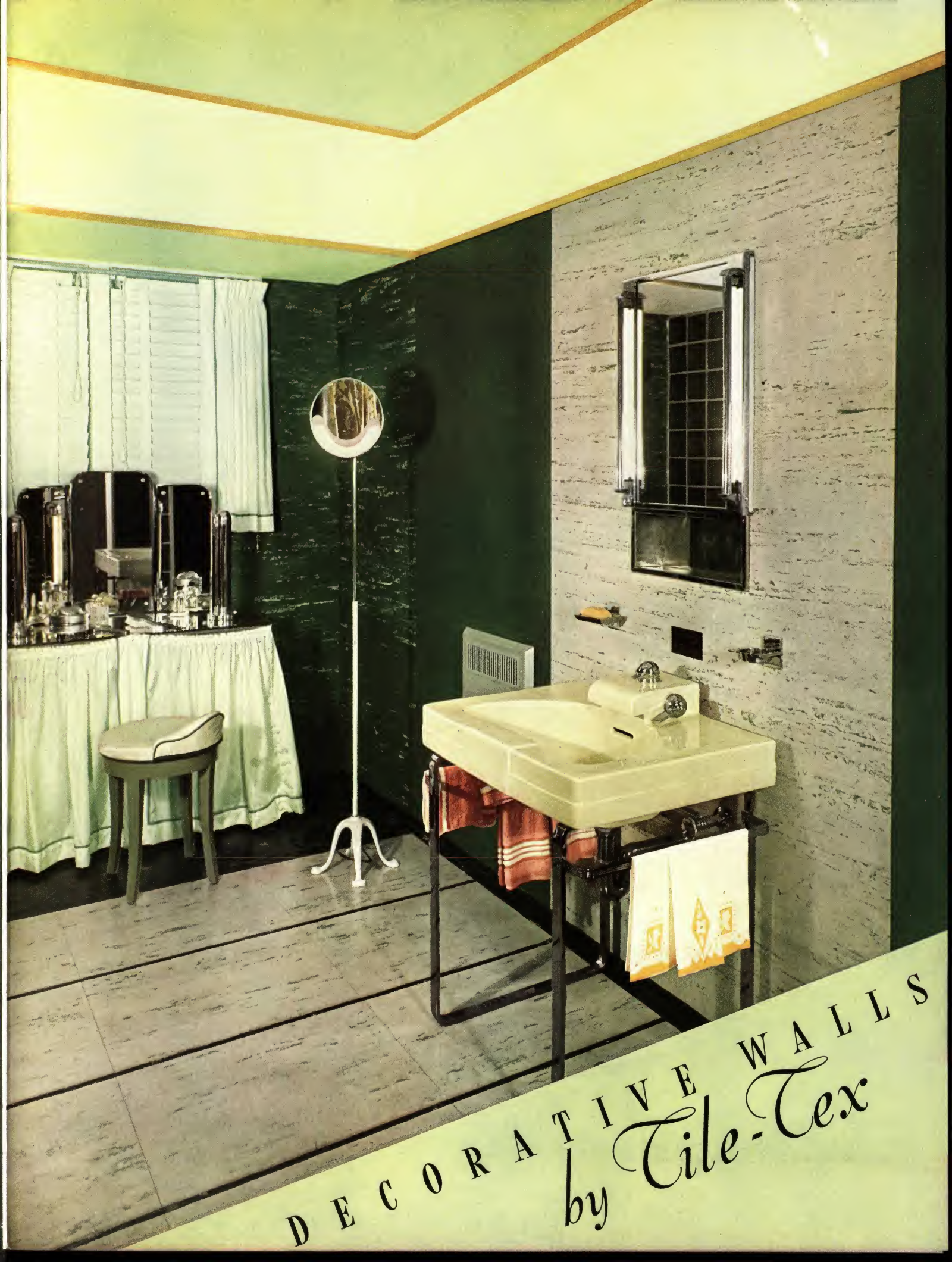
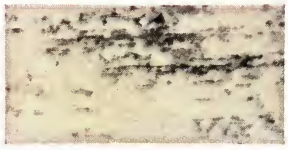
THE TILE-TEX COMPANY

CHICAGO HEIGHTS, ILLINOIS


DECORATIVE WALLS
by Tile-Tex

W-1703

W-173



W-1701

W-171

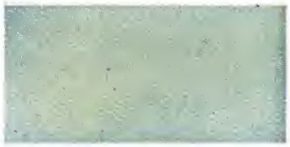
W-174

W-1704

Solid pastel colors, so popular in modern wall treatments, are available in the Imperial color group. Buff, Coral, Orchid, Turquoise and Light Green make up a complete range of soft, delicate and restful colors, particularly smart for bathroom and kitchen walls.

W-170

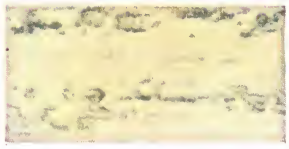
Heretofore, mottled colors in wall tiles have been a hope but never a reality. Tile-Tex has created six unique and harmonious effects in mottled combinations. These colors are easy to look at, easy to keep clean, and never monotonous.



W-172

W-1705

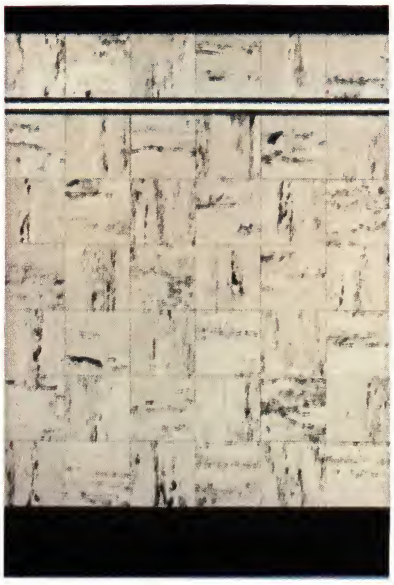
W-175



W-1702

W-176

W-1706



No. 1701—No. 41 Trim

IMPERIAL COLORS

The colors shown on this page and pages 14 and 15 are an adequate answer to the demands of interior decorators for colors that fit the modern trend without garishness.

The design plates shown here will help you visualize a section of wall laid complete with cap rail, feature strips, and base. The vertical inserts in the display at the right show effectively the possibilities of combining solid and mottled colors so as to make the finished wall more interesting.

No. 1704—No. 45 Trim

A NEW, PERMANENT AND LOW COST WALL TILING

Tile-Tex Wall Tile, both from the standpoint of appearance and composition, is a refreshingly new and adaptable wall covering material. It is a flexible, individual tile manufactured from asbestos fibre, mineral coloring pigment, and special binders. A new manufacturing process was developed to produce the soft satin-like finish so desirable in wall treatments.

Low cost, simplicity and ease of installation, unexcelled wearability, and minimum upkeep cost characterize this unique tile. Since it is a unit laid wall, it can be used to advantage both in new construction and in remodeling existing buildings, where low cost is a paramount requirement. The beauty of finished Tile-Tex walls is strikingly new in its character and conception. Bright, clear contrasts, as well as soft blended pastel effects are possible with the diversified group of colors available.

With fifty-four colors and thirteen sizes, any decorative demand can be satisfied. Small sizes include 3x6, 4x4, 4½x4½, 4x12, and 6x6; large sizes include 6x12, 6x18, 9x9, 9x18, 9x27, 12x12, 12x24, 18x18, and 18x24. The use of feature strips and inserts, and the proper choice of trim in contrasting or harmonizing colors add further variety to its design potentialities.

Tile-Tex Wall Tile is extremely simple to apply. It can be applied directly to new or old plaster walls. It is not necessary to undergo the expense of costly wall surfacing in preparing walls for this new tiling. Finished plaster, wall boards, or any smooth, sound surface make an excellent backing for this smart, modern tile. Installation is made by competent approved wall covering contractors located throughout the country.

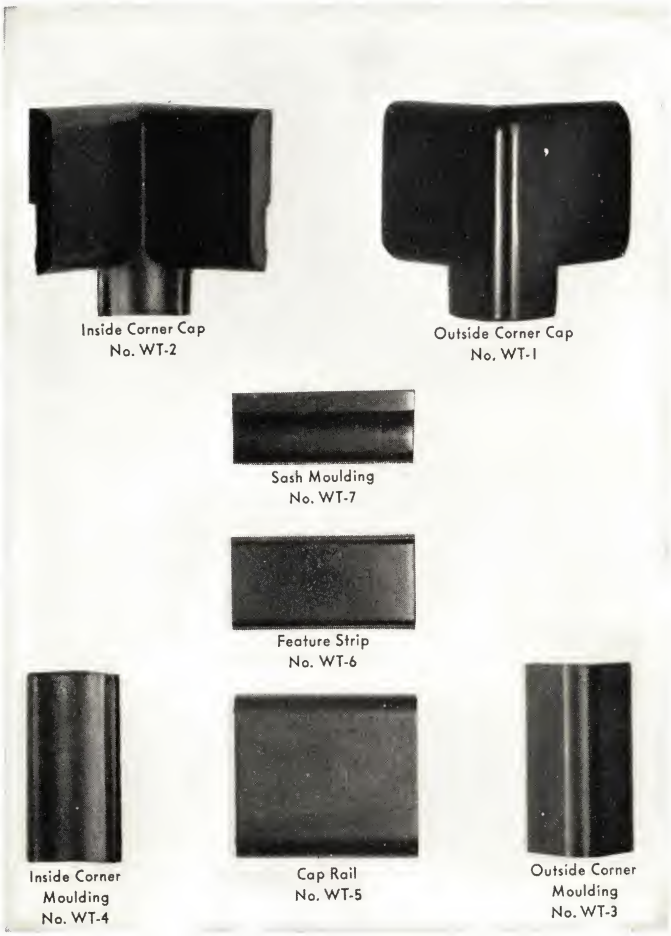
SPECIFICATION DATA

Furnish and install Tile-Tex Wall Tile on all plaster walls and/or (.....) walls, as called for in the specifications, as follows:

1. **Material**—Wall Tile shall be Tile-Tex, as manufactured by The Tile-Tex Company, Chicago Heights, Illinois, in colors and designs as shown in schedule of wall finishes.
2. **Adhesive**—All adhesive used shall be Tile-Tex Wall Cement No. 1200.
3. **Preparation of Walls**—(a) Plaster walls shall be finished three coat plaster work, dry and free from all foreign matter and shall have a smooth steel troweled finish free from irregularities or trowel marks.

   (b) Wall Board Walls: All joints between sections of gypsum wall board, fibre board or plywood board shall be filled with an approved grouting material so as to finish flush with surface of wall board.
4. **Installation**—Installation of Tile-Tex Wall Tile shall be in strict accordance with the written directions of The Tile-Tex Company. (*Installation manual sent on request.*)

   NOTE: Tile-Tex Wall Tile shall not be applied to walls which are damp on the surface, or to finished coat of plaster not thoroughly bonded to brown coat.
5. **Mouldings and Trim**—If desired, at inside and outside wall corners, install Tile-Tex Trim in colors as indicated on schedule of wall finish. Where Wall Tile is installed to wainscot height Tile-Tex Cap Rail shall likewise be installed.
6. **Tile-Tex Base**—Where not indicated in floor specifications, install Tile-Tex Cove Base (6″), (5″), (3½″) and/or Tile-Tex Straight Base (5″), in accordance with written directions of The Tile-Tex Company for installation of Tile-Tex Base.
7. **Cleaning of Walls**—After installation is completed, surface of Tile-Tex Wall Tile shall be thoroughly cleaned using steel wool and approved Tile-Tex wall cleaner, removing all spots, adhesive, and other dirt.
8. **Tile-Tex Wall Finish**—After walls are thoroughly clean and dry, apply one coat of Tile-Tex Wall Finish in accordance with manufacturer's specifications.

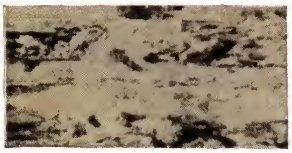


TILE-TEX MOLDED TRIM

THE TILE-TEX COMPANY

CHICAGO HEIGHTS, ILL.

EASTERN SALES OFFICE, 101 PARK AVE., NEW YORK CITY



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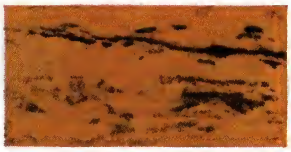

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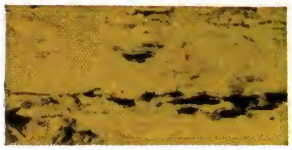
1001



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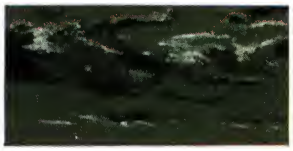
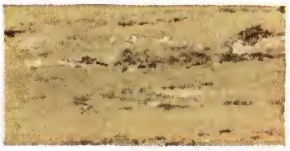


1012



1014

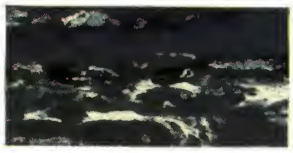
1004

105

DE LUXE COLORS

When lower cost is a desirable objective, and where sharper colors of more definite hues are required, the DeLuxe color group in Tile-Tex Wall Tile provides nine solid and eleven mottled effects.

This group includes strong, modern colors in reds, yellows, blues and greens. The tones of this line are often used with Imperial colors when definite contrasts are desired.



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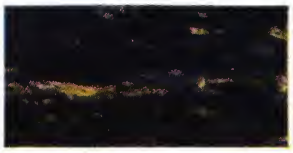

1007

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STANDARD COLORS

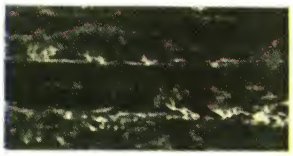
Standard colors in Tile-Tex Wall Tile offer a wide variety of colors, both solid and mottled, in medium shades.

These are rich colors which possess warmth and character. Many beautiful and tasteful walls can be created from these colors—and they are less costly than either the Imperial or DeLuxe lines.

45

713

702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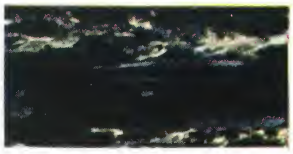
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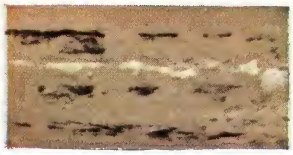
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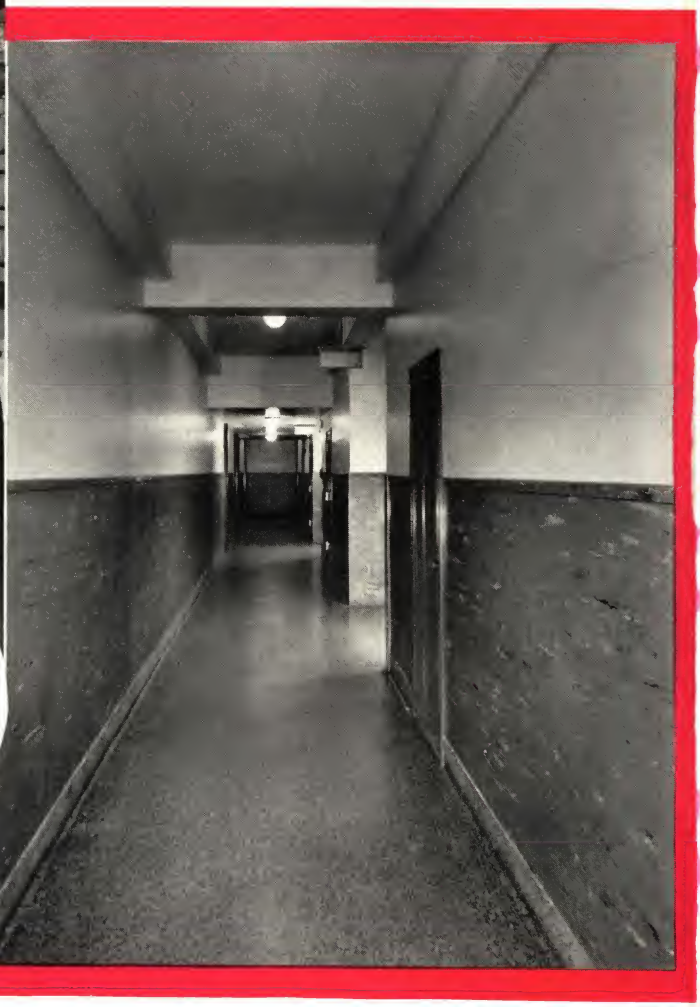

WALLS
TILE-TEX
FLOORS

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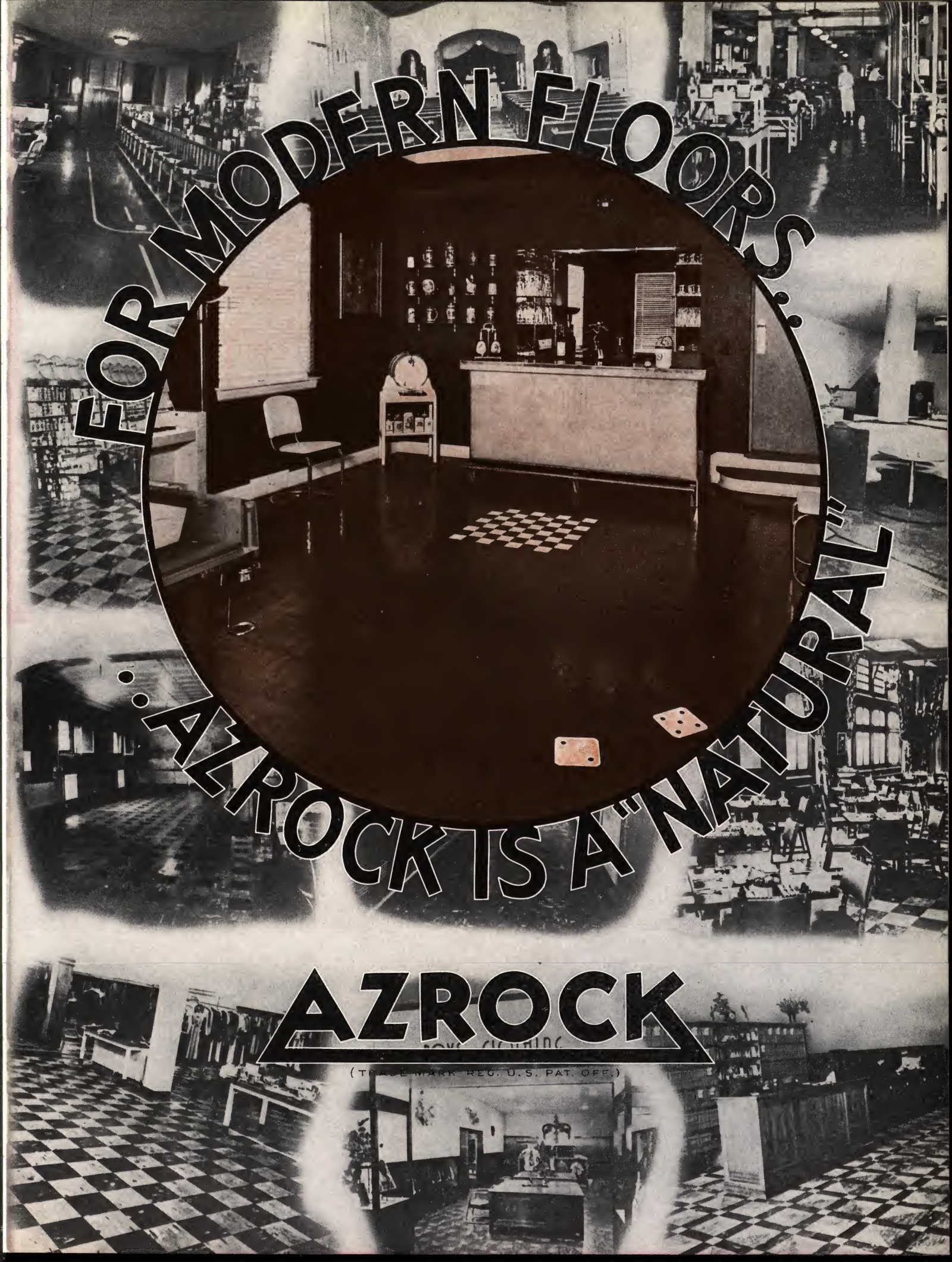
THE TILE-TEX COMPANY

CHICAGO HEIGHTS, ILLINOIS


FOR MODERN FLOORS...
AZROCK IS A "NATURAL"
AZROCK
(TRADE MARK REG. U.S. PAT. OFF.)

AZROCK CARPET TILE *is a superior mastic tile*

AZROCK CARPET TILE contains as one of its basic ingredients limestock rock asphalt, a material long famed for its many unique characteristics. It is an asphalt rock: a limestone thoroughly impregnated with a natural high grade asphalt. In the manufacture of Azrock, cotton and asbestos fibers also play an important part, since it is their random interlacing that gives greater strength and additional resilience to the tile. Mineral color pigments penetrate the entire thickness of tile to assure permanence of coloring.

All materials are thoroughly amalgamated and uniformly mixed, formed under extremely high pressure by passing through rolls. Following this, the dense tough sheets of the finished product are cut into accurate rectangular tile units. Azrock then is ready for use . . . a floor-covering tile distinctive in appearance, staunchly durable under constant service and unexcelled in its combined advantages.

The process of manufacturing Azrock is continuously under laboratory control, with competent engineers and chemists in charge. Azrock's modern factory is equipped with specially designed machinery, a guarantee of standard product to meet the strictest requirements, including Federal Government specifications. Production facilities are adequate to insure prompt shipment of orders.

Many advantages recommend AZROCK

It Is Micro-Cut. By means of a new exclusive process the cutting of Azrock Carpet Tile to micrometer accuracy provides a tile with edges that lay up tighter, quicker, closer than ever before possible in asphalt and mastic tile floor covering.

Minus dust-catching joints, Azrock can keep the sparkling freshness of a new floor years after it is laid. This micro-cut process was developed by Azrock's manufacturers and is available only with Azrock.

Azrock Is Resilient. A gentle resilience makes Azrock Carpet Tile especially desirable in buildings where a reduction of noise is essential. Azrock not only absorbs and minimizes the sound of walking steps, but its resilient surface is exceptionally comfortable and restful underfoot.

Azrock Is Durable. There's a long-life durability to Azrock Tile that especially recommends its use on floors that must give constant service. Capable of withstanding long years of hard wear, Azrock asks no favors of its users. Maintenance is simple and inexpensive.

Azrock Is Sanitary. Azrock is smooth-surfaced, creating no dust or dirt. It will not warp nor check and its micro-close tile joints leave no room for dust catching. The dense texture of the tile allows easy cleaning, simple maintenance. Azrock readily acquires a soft natural lustre under usage, but may be waxed if you desire.

Azrock Is Fire-resistant. Azrock is fire-proof when laid on concrete and, on inflammable types of subfloors, serves as a definite fire-retarder. Carelessly dropped cigars or cigarettes cannot permanently harm Azrock's surface and their marks are easily erased in ordinary cleaning. Azrock insulates against electricity and, also, against extremes of heat or cold.

Azrock Is Economical. Add to Azrock's long-life wearability and its inexpensive upkeep, the fact that Azrock costs no more to buy and install than many ordinary floor coverings, and it is immediately apparent that Azrock is one of the most practical and economical floor coverings you can specify.

Lay Azrock on Any Firm Subfloor. Before the development of Azrock Carpet Tile, asphalt tile installations over wood subfloors could not be made satisfactorily without expensive underlayments. Now, however, Azrock Tile can be laid successfully over any firm, smooth subfloor: wood, concrete, terrazzo, ceramic tile, marble or steel, old or new, and without the use of costly underlayments.

The flexibility of the tile adjusts itself admirably to slight irregularities without undue strain and also provides unusual recovery from indentations made by foot or furniture, or the passage of rolling equipment.

Lay Azrock Above or Below Grade. Azrock is impervious to dampness. This moisture-proof characteristic permits Azrock ordinarily to be installed on subfloors below grade without the necessity for expensive waterproofing.

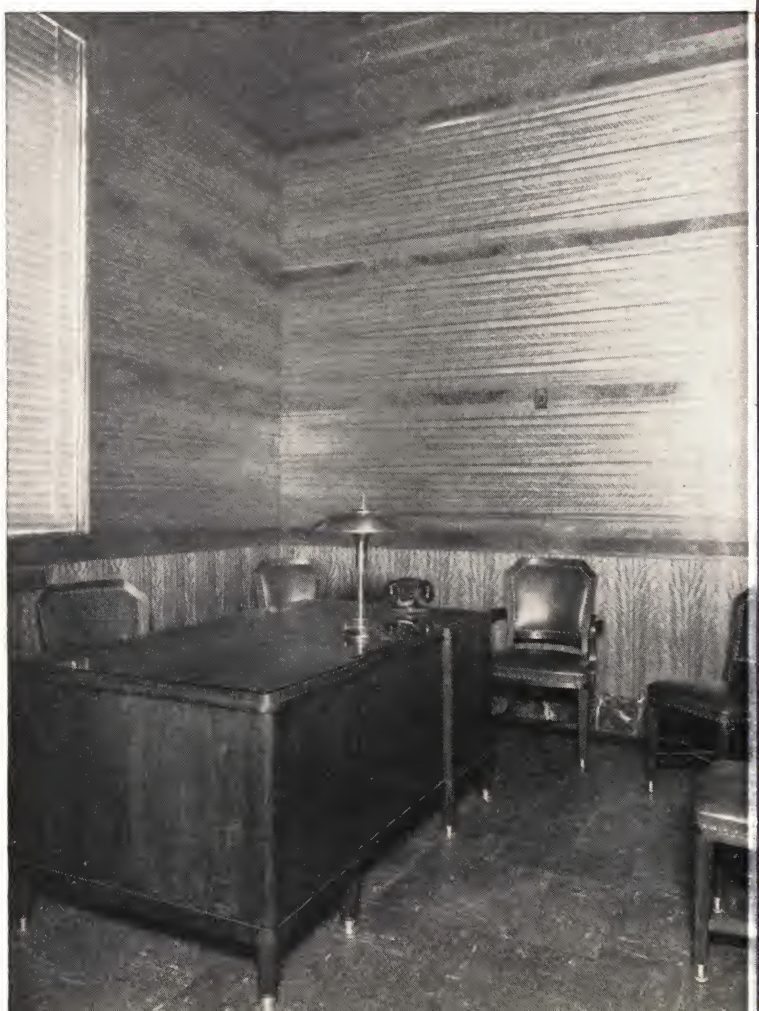
Distinguished Record. The popularity of this ultra-modern and very versatile floor covering is evidenced by the sweeping number of installations all over this country, as well as a fast growing demand in export markets.

Azrock Carpet Tile is the ideal choice for floor covering in modern homes (from kitchen to recreation room!), in offices, stores, hospitals, libraries, schools, restaurants, theaters, churches, courthouses and all kinds of public or semi-public buildings. Its use is an important complement to every such type of new construction; and by means of Azrock, old floors too can be made modern at moderate cost and for permanent satisfaction.

Cove Base. Azrock Sanitary Molded Cove Base is available, whenever desired. It is made in standard wall height of 6″, but special heights from 2½″ to 6″ can be furnished. Standard length of cove base is 12″, standard thickness ¼″, with ⅛″ floor flap which can be used with either ⅛″, $\frac{3}{16}$″ or ¼″ tile.

Beauty is an out-

ANY one of Azrock Carpet Tile's richly textured colors, or a combination of two or more, makes a strikingly beautiful floor. There are sixteen plain and twenty-one marbleized colors (turn to next page for accurate reproductions). Their mellow richness and charm lend an air of distinction wherever Azrock is installed. Harmonious variations, contrasts of strong and delicate tints, a blending of marbleized with plain effects . . . all are possible and encourage the creation of custom floor patterns to suit any decorative theme. It is Azrock's distinctive appearance that marks



standing AZROCK feature

it so vividly as The Modern Floor Covering for Interior Floors.

All Azrock colors are permanently clear and bright, running as they do through the entire thickness of each tile. They will not fade and the beauty of an Azrock floor is as lasting as this long-lived tile itself.

Different tile sizes aid the origination of unique and attractive floor patterns. Standard sizes are 9″x9″, 12″x12″, 6″x12″, 9″x18″, 12″x24″, 13½″x27″ and 18″x24″. Special sizes are 3″x3″, 4″x4″, 4½″x4½″, 6″x6″, 18″x18″, 3″x6″, 3″x9″, 3″x12″, and 3″x24″. Diagonal half-tiles are also available in 6″x6″, 9″x9″ and 12″x12″ sizes. Standard thicknesses are ⅛″, 3/16″ and ¼″ to meet various requirements. ⅛″ thickness should be installed over concrete subfloors only and is not recommended where the floor will be subjected to unusually heavy traffic and abuse. 3/16″ thickness is the usual standard, being suitable for installation over wood or concrete subfloors, and is recommended for all types of public buildings, stores, hospitals, schools, etc. ¼″ thickness is for extra heavy duty and may be installed over wood or concrete subfloors wherever extra heavy traffic must be withstood.

UVALDE ROCK ASPHALT CO.

C-1

C-2

C-3

C-4

C-5

C-6

C-7

C-8

C-9

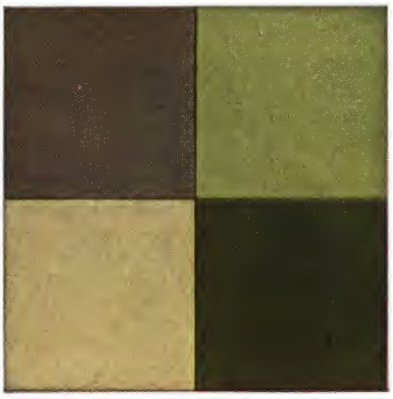
C-10

C-11

C-90

C-91

C-92


C-94
C-6

C-7
C-93

C-93

C-94

AZROCK
(TRADE MARK REG. U.S. PAT. OFF.)
CARPET TILE

C-11
C-92

C-4
C-9

PLAIN COLORS

Countless color combinations and an infinite variety of floor designs are possible from this array of beautiful colors, whose pigments penetrate the full thickness of tile for permanence. Bright or subdued, grave or gay, an Azrock floor is always a thing of beauty.

C-91
C-90

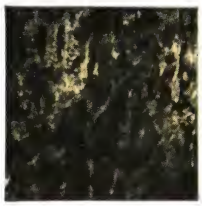
C-6
C-7

C-1
C-8

C-94
C-93

C-92
C-11

C-9
C-4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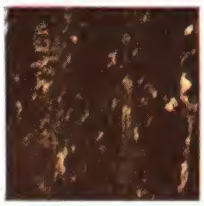
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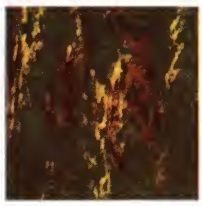
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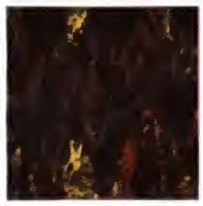
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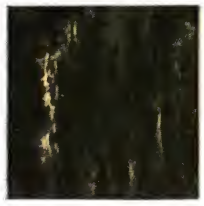
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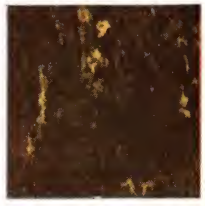
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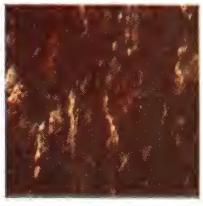
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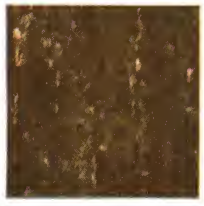
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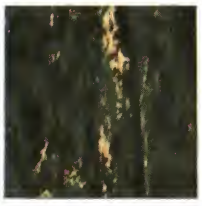
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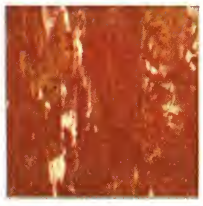
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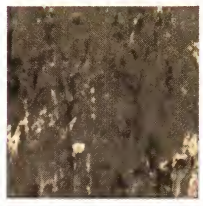
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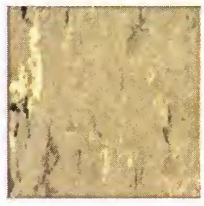
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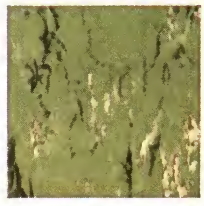
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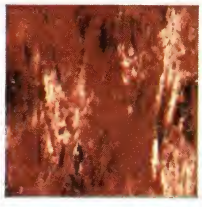
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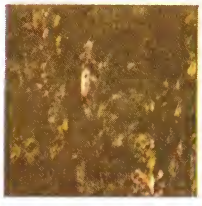
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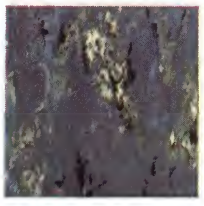
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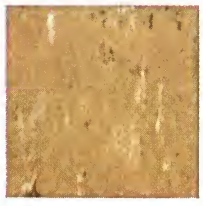
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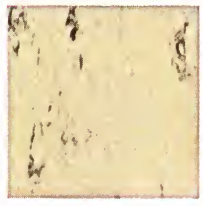
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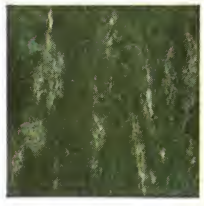
C-62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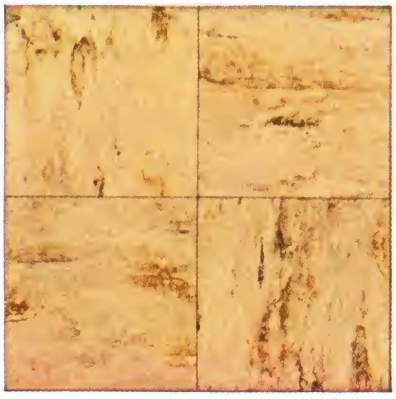

C-62
Field Pattern

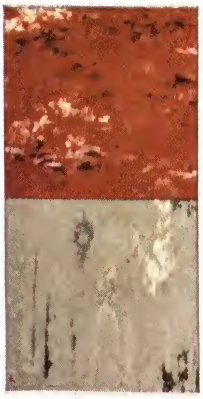
AZROCK
(TRADE MARK REG U.S. PAT. OFF.)
CARPET TILE

MARBLEIZED COLORS

These extraordinarily beautiful tiles are reproduced here with exacting accuracy. Note how well they harmonize with each other as well as with the plain colors. And the colors, which go all the way through the thickness of tile, will last as long as this durable floor covering itself! Remember, marbleized tiles do not show traffic marks as readily as plain colors.

C-33
Field Pattern

C-21
C-61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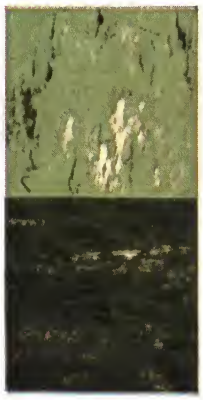
C-46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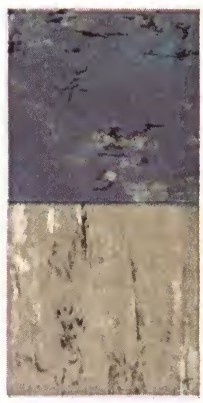
C-25
C-44

C-51
C-32


C-50
C-46

C-45
C-61

AZROCK Industrial Tile

AZROCK Industrial Tile is especially manufactured for use on the floors of factories, mills, warehouses, stores and schools . . . or wherever floors must undergo unusually hard usage. It has greater asphaltic content, a thicker-webbed reinforcement of cotton fibers, than is needed in an ordinary floor covering. This additional toughness makes it stand up strongly under the roughest kind of treatment . . . the constant movement of rolling stock and machinery . . . abrupt changes in temperature, intense heat, intense cold . . . heavy standing loads . . . continuous foot traffic.

Azrock Industrial Tile is resilient, thereby reducing sound and absorbing shocks, and increasing the comfort of busy workers. This quality saves wear and tear on hauling equipment; truck wheels do not show wear when used on Azrock floors. And the tile resists indentation from standing loads. Like all Azrock products, it is waterproof, fire-resistant and insulates against electricity, as well as against extremes of temperature.

Azrock Industrial Tile is easily laid with a close fit, without undue interruption of normal business activities. It is available in solid colors of black or mahogany, and marbleized or textured with either black or mahogany as the base color. Its installation increases the attractive appearance of even drab surroundings. It can be had in standard thicknesses of $\frac{1}{4}''$, $\frac{3}{8}''$ and $\frac{1}{2}''$ and in standard sizes of $9'' \times 9''$, $12'' \times 12''$ and $12'' \times 24''$.

AZROCK Planktile

AZROCK Planktile, the third member of the Azrock family, serves a definite purpose as a moderate-priced, attractive floor covering in halls, corridors, theater aisles, warehouses, factories or any similar spaces not subjected to heavy standing loads. It possesses a velvety soft resilience that deadens sound and muffles steps, so that now any modern building can have quiet, noise-hushed corridors.

Azrock Planktile maintains the rugged durability and long-life wearing quality of all Azrock products, with the necessary stamina to withstand constant foot traffic. It is moisture proof, sanitary, fire-resistant, insulates against heat, cold and electricity, is easily maintained and is exceptionally reasonable in cost. It may be had in plain black or six dark textured colors. Azrock Planktile is manufactured in the standard thickness of $\frac{5}{32}''$ and in the standard sizes of $9'' \times 9''$, $12'' \times 12''$, $12'' \times 24''$ and $13\frac{1}{2}'' \times 27''$. Special sizes available are $6'' \times 6''$ and $6'' \times 12''$.

AZROCK is manufactured by UVALDE ROCK ASPHALT CO.

AZROCK, the greatly improved and completely practical mastic tile floor covering, has proved the crowning achievement of long years of scientific research by one of the best known asphalt companies in the world, THE UVALDE ROCK ASPHALT Co. This company has been in the asphalt business exclusively since 1912 and is the oldest and largest producer of limestone rock asphalt in the United States. Azrock is produced in a modern, up-to-date plant especially erected for the purpose and located in Houston, Texas. All Azrock is sold by approved Azrock distributing contractors, located in all the principal cities of the U. S., as completed installations made in accordance with Azrock specifications. For additional information direct inquiries to general offices:

UVALDE ROCK ASPHALT COMPANY

Frost Nat'l Bank Bldg.,
San Antonio, Texas

DISTRICT REPRESENTATIVES

CHICAGO, ILL. . . BOSTON, MASS. . . . . KANSAS CITY, MO.
BALTIMORE, MD. . TULSA, OKLA . . . . ATLANTA, GA.
NEW YORK, N. Y. . . . . SAN FRANCISCO, CAL.

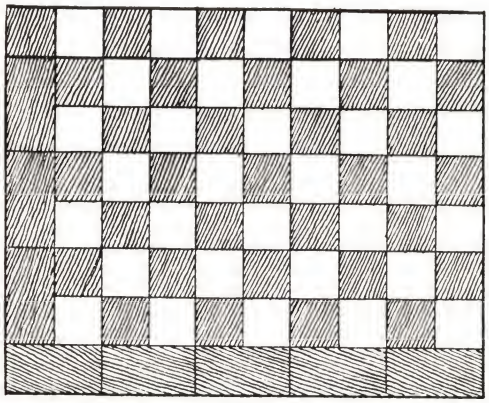
AZROCK PRODUCTS

(for interior floors only)

Azrock Carpet Tile . . . for decorative floors in general use

Azrock Industrial Tile . . . for heavy duty floors

Azrock Planktile . . . for moderate priced, light- to medium-duty floors.



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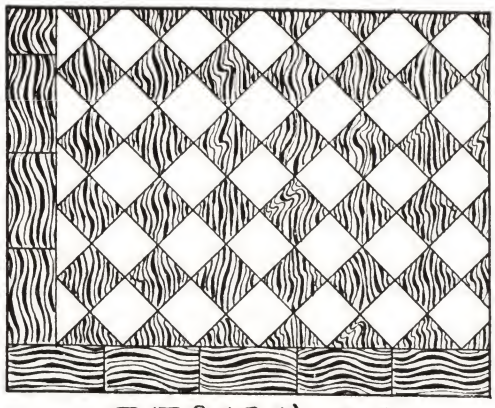

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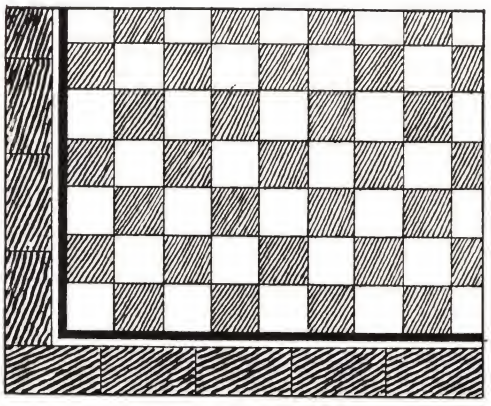
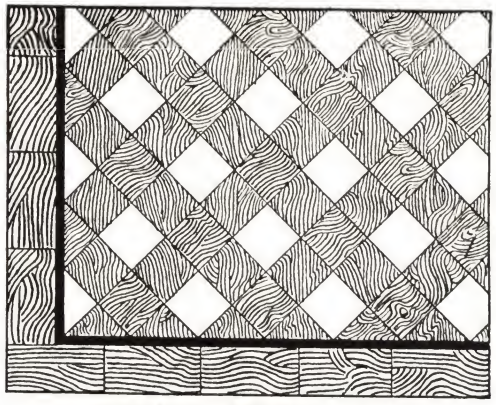


DESIGN-A3

PATTERNS

An important point in the selection of Azrock by the country's leading architects is its adaptability which enables this beautiful and colorful floor tile both to harmonize with and emphasize upon today's modern interior decorative treatment. Floor patterns which are designed for Azrock, using one or more colors or varying the tile sizes, are practically limitless in number and for any floor covering purpose, in surroundings grave or gay, brilliant or severe.



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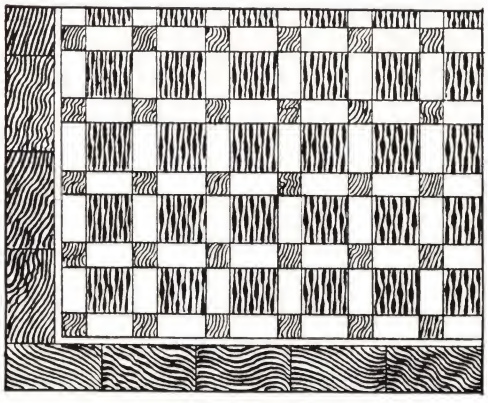

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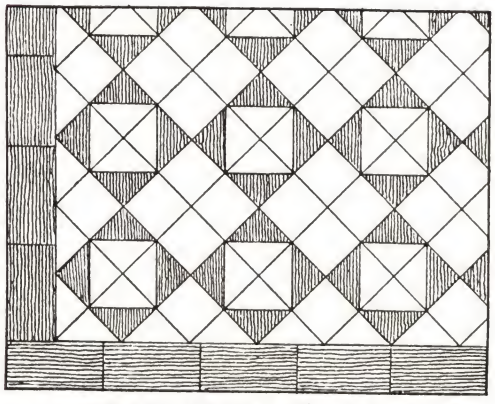

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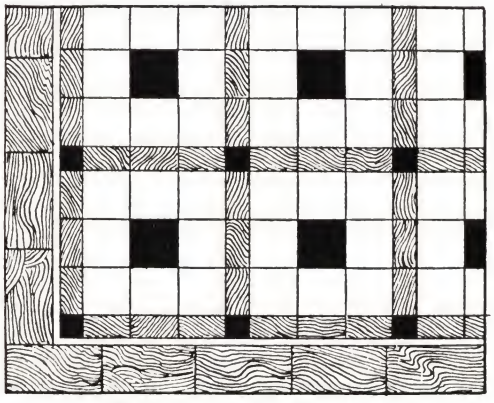

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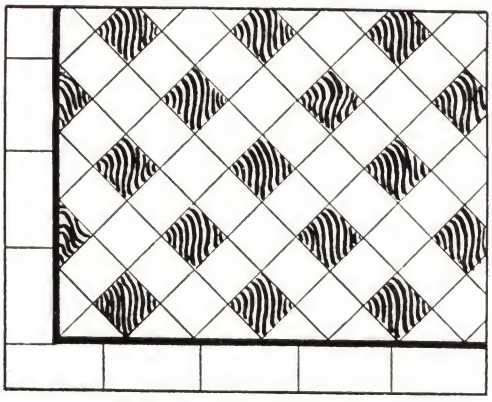

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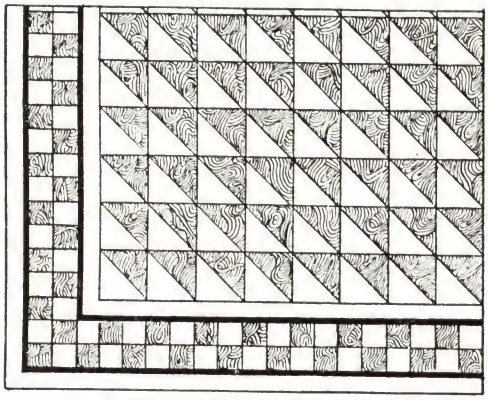

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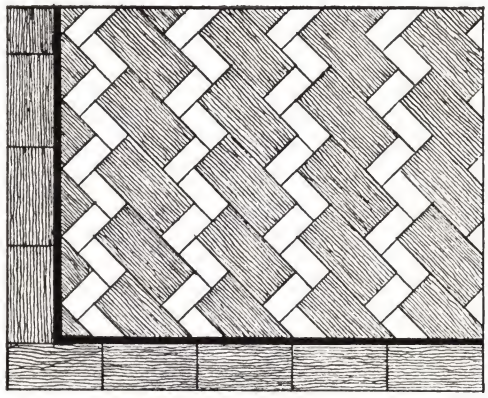

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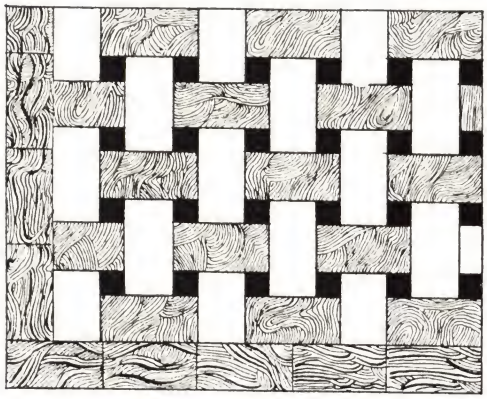
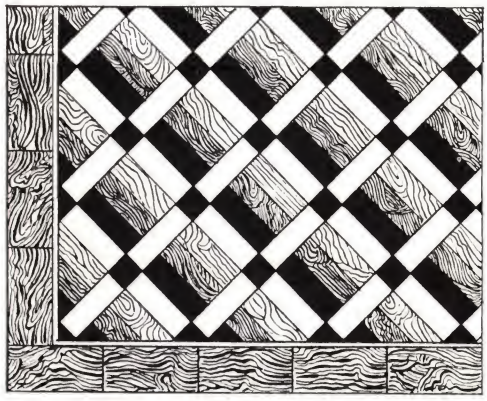


DESIGN-A11

PATTERNS

The myriad combinations that can be arranged harmoniously into interesting and beautiful floor patterns present fascinating possibilities. The few suggestions shown here barely enter the subject. By combining colors, mixing plain with marbleized tile, or varying the tile sizes . . . using all or any of these means! . . . practically any decorative motif can be carried out. Azrock is a spur to the creative artistry of every builder.



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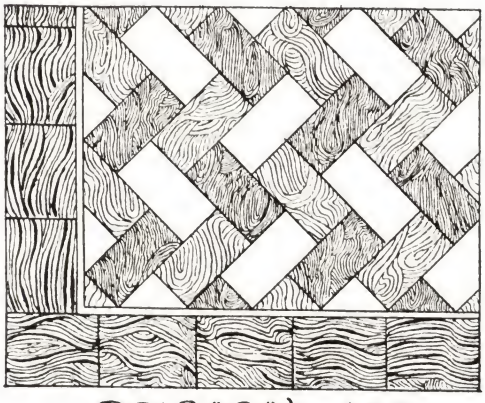

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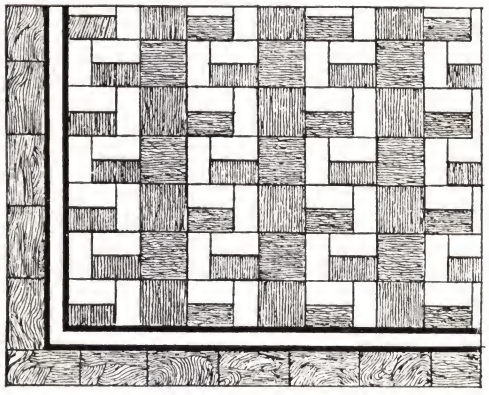

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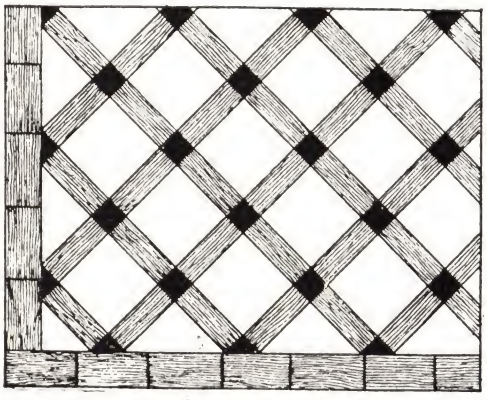
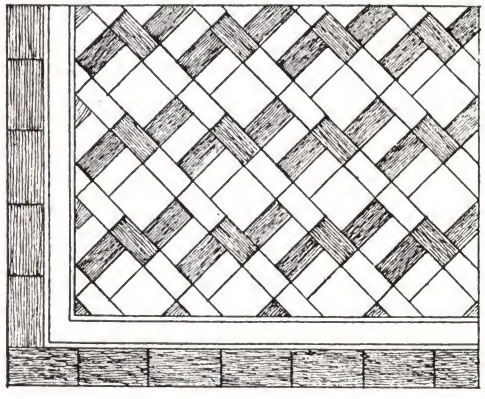


DESIGN-A15



DESIGN-A16

AZROCK

Floor Covering Products

Carpet Tile

Industrial Tile

Planktile

Manufactured by

UVALDE ROCK ASPHALT COMPANY

San Antonio, Texas

Sold and Installed by:

Approved Distributing Contractors

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AMERICAN MAT CORPORATION

1706 Adams Street
TOLEDO, OHIO

A Staff of Matting Engineers and Distributors Throughout the Country

EZY-RUG Colored Rubber Link MATTING

Cuts Cleaning Costs

Michigan Bell Telephone Co., Detroit, Mich.

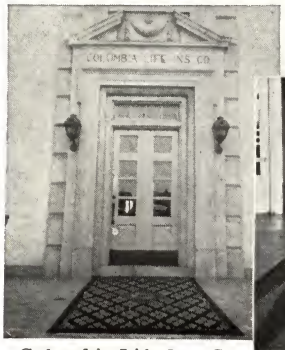
Traps the Dirt at the Door

Devilbiss High School, Toledo, Ohio

Prevents Tracking Grit onto Carpeting, Prolonging Its Life

Statler Hotel, Boston, Mass.

Ends Sloppy, Slippery Floors



Columbia Life Ins. Co., Cincinnati, Ohio

Avoids Accidents and Lawsuits, Being Slipproof and Tripproof

Union Terminal, Cincinnati, Ohio

Keeps Out Germ Laden Filth

Mercy Hospital, Pittsburgh, Pa.

Modernizes and Beautifies Lobbies, Corridors and Entrances

Shrine of The Little Flower, Royal Oak, Mich.

Harmonizes with Interior Color Schemes

Lincoln Theatre, Miami Beach, Fla.

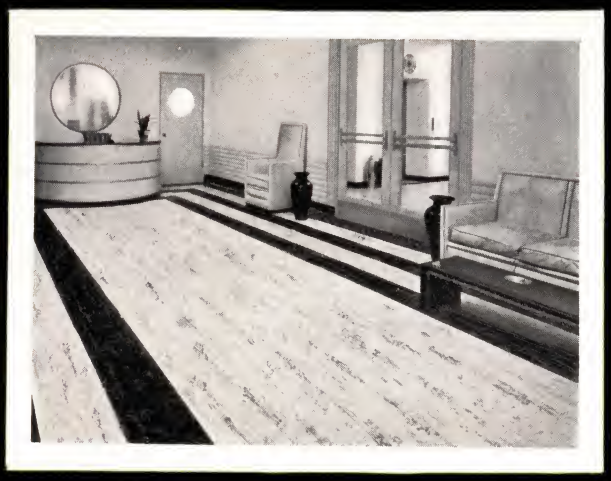
Firm Name or Initial on the Mat Provides Real Advertising Value

Florsheim Store, Toledo, Ohio

Write for Folder and Prices on Mats for All Purposes

62T

MEMORANDA



Amtico AND Trent

RUBBER FLOORING

AMERICAN TILE & RUBBER COMPANY

TRENTON, N. J.

THE BEAUTY OF MARBLE WITH CARPET COMFORT...

Amtico

MARBLEIZED RUBBER TILE FLOORING

ALL the deep richness and natural sheen of the world's finest marbles . . . all their patrician dignity . . . all their wealth of color — yet all the quiet softness and the resilient comfort of carpeting . . . THAT is Amtico!

Recognized a "quality" product in every respect, this modern rubber flooring . . . with its permanent life and sparkle . . . brings a new dynamic note to modern interiors. Custom "tailored" to blend with the style and feeling of each interior — residential or commercial — Amtico becomes a part of the floor . . . in fact, an integral part of the building.

You will find it decidedly to your advantage — and your client's advantage — to study the "virtues" of Amtico Rubber Tile . . . its rich-toned marble figurings . . . its practically limitless possibilities of design and color combinations . . . its almost unbelievable resistance to wear year after year. . .

Top: Note how admirably Amtico Marbleized blends with the rich, warm woodwork. A typical installation. First National Bank, Flint, Mich.
Above: Selling appeal in the floor! Amtico Marbleized—soft, resilient, colorful...and "designed." Installed by Otis Massey Co., Houston, Texas.
Right: More than carpet comfort, more than granite beauty! Amtico is likewise sanitary, easy to clean ...and quiet. Central Prison Hospital, Raleigh, N.C.

Amtico RUBBER TILE FLOORING is made from pure virgin rubber . . . and built DENSE throughout its entire structure. Consequently, Amtico withstands the endless march of feet, tramping, scraping, scuffing, year after year . . . and still remains fresh, unfaded, without a "walked" appearance or any visible sign of age. And this tight, compact construction likewise gives Amtico Tile its carpet-soft resiliency . . . prevents it from expanding, contracting or growing hard or brittle . . . keeps its surface impervious to dirt and moisture, always sanitary, always quiet. Amtico Tile can't help being thoroughly practical . . . easy, inexpensive to maintain!

Today Amtico Marbleized Rubber Tile is widely used in schools, homes, commercial and public buildings, bars, stores, churches, hospitals—in fact, wherever a modern floor unaffected by heavy foot-traffic is required. In short:

YEARS OF HARD WEAR CANNOT MAR THE BEAUTY OF *Amtico* MARBLEIZED *Flooring*

Amtico Marbleized put to a hard test . . . in one of New York's most popular rendezvous. The colorful bar and grill of the Hotel McAlpin. Flooring Contractors: L. Jones & Company, New York.

Not only is Amtico made correctly . . . by pioneers in the manufacture of rubber flooring . . . but it is LAID correctly. To install the products of the American Tile and Rubber Company, only contractors known for the precision of their work are selected.

WITH THE WIDE RANGE OF Marbleized COLORS YOU CAN CARRY THROUGH ANY DECORATIVE MOTIF . . . ANY COLOR SCHEME . . .

THE WIDE COLOR RANGE of Amtico Marbleized Tile opens to the architect and decorator a new opportunity to create interiors of unusual charm and character. For Amtico Marbleized textures and varigations are not ordinary . . . but possess colorings and effects decidedly their own . . . that blend well with any style architecture.

Amtico Marbleized Rubber Tile embraces a full color array . . . from a cool, frothy white-and-blue to a deep, warm "walnut" mixture Combined with borders, feature strips and specially designed inlays, it insures interiors BASICALLY correct . . . BASICALLY handsome.

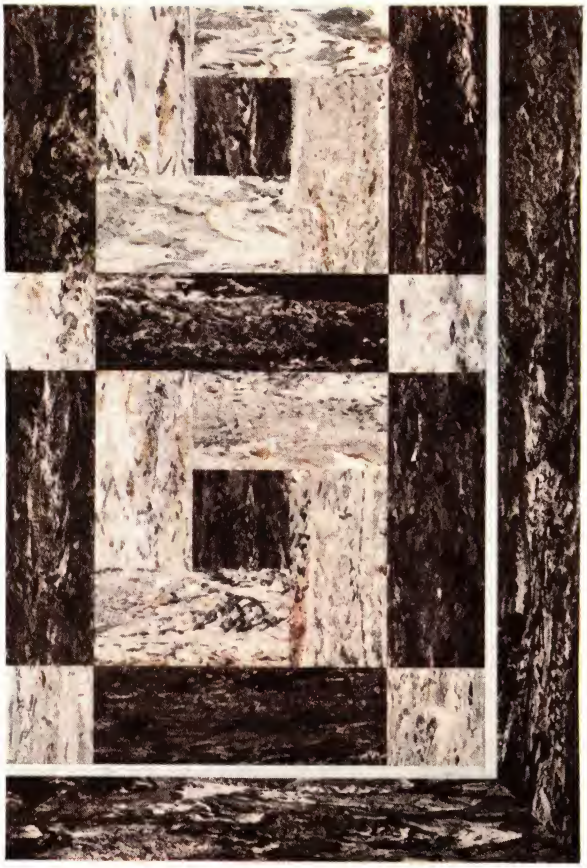
THE NEW SOFT SHADES

In addition to the standard patterns, we now offer Amtico Marbleized Rubber Flooring in eighteen soft two-tone shades. These creations are equally distinctive—especially the new Burgundy. Because of their quiet "feeling," and subdued colorings, they are recommended for more intimate interiors.

PLAIN COLOR TILES, too . . .

Sixteen brilliant Amtico Plain Colors offer the architect, decorator and contractor a wealth of opportunity for individual flooring effects. These Plain Colors are especially fascinating in combination with the Marbleized blends.

ALTHOUGH AMTICO RUBBER TILE IS DESIGNED FOR THE FINEST WORK, ITS COST IS MODERATE



Amtico MARBLEIZED • FOUR POPULAR PATTERNS

11
60

Amtico GRANITE TYPE Rubber Flooring

THE BEAUTY OF GRANITE OR TERRAZZO . . . THE RESILIENCY, THE NOISELESSNESS OF RUBBER

A typical Amtico "Granite" Floor . . . soft to the foot and the eye. . . . Providence (R. I.) Journal Building. Installed by Crooker Co., Providence.

A PERFECT simulation of granite or terrazzo flooring—a simulation that defies detection by the eye alone . . . PLUS the soft-under-foot resiliency and quiet comfort of live rubber — and rubber's lighter weight, freedom from unsightly cracking . . . and its important non-slip advantage. Only Amtico can give you this "granite" floor . . . IN RUBBER.

Built DENSE — like Amtico Marbleized Tile — the Granite Type has the same carpet-like shock resistance, the same sanitary, noiseless, easy-to-maintain features. It likewise remains fresh, unchanged under the tread of millions of tramping feet. . . .

Amtico Rubber "Granite" Tile is especially suitable for offices and public buildings. The Chicago ticket office of the South Pacific Lines, for instance, boasts a trim "granite" floor—with rich coloring and carpet-soft resiliency. Installed by Turner Resilient Floors, Inc., Chicago.

A splendid example of the wide adaptability of Amtico "Granite." Note how perfectly this modern floor covering accentuates the appointments . . . how easily it becomes a part of the picture. Installed by Crooker Co., Providence, in St. Bernard's Church, Rockville, Conn.

ARCHITECTS and decorators are finding Amtico "Granite" Rubber Tile a truly versatile floor covering. For wherever the aristocratic richness of marble or terrazzo is favored . . . churches, courtrooms, museums, office buildings . . . this modern rubber tile is proving its remarkable adaptability.

For new buldings, Amtico "Granite" is superb. With its striking color effects, its typical granite or terrazzo patterns, it is decidedly in step with present trends in decoration — especially the popular "modern classic."

In present structures, Amtico "Granite" is equally effective. It forms a striking setting for the "older" decorative styles. Its wealth of color and its smart combinations give new life to otherwise dull interiors.

•

Amtico Granite-type Tile is unconditionally guaranteed against disintegration or any change in its character. Floors laid over 10 years ago still retain their original sparkle even under severe wear.

•

Amtico "Granite" Rubber Tile Flooring is made in six standard combinations pictured at the right. However, when desired, we will create special effects.

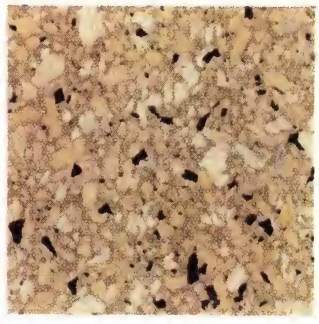
Amtico

GRANITE TYPE RUBBER FLOORING IS EASILY INSTALLED IN NEW OR OLD BUILDINGS . . .

No. 15: Tyronne

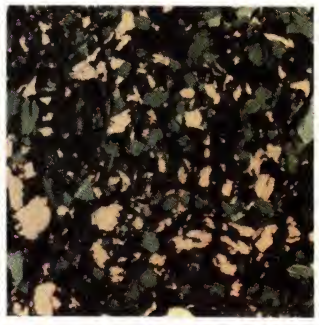
No. 10: Barre

No. 16: Abyss



No. 1: Milan

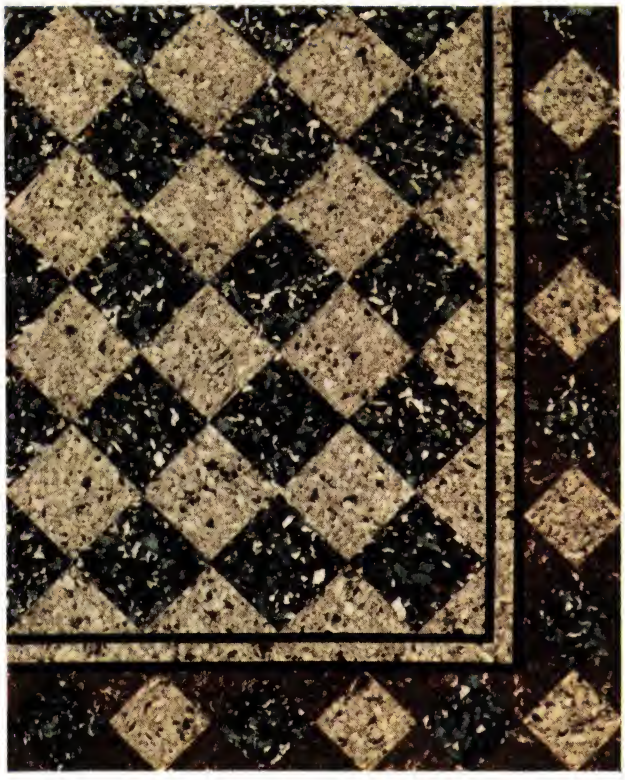
No. 14: Venice



No. 12: Truro

STUDY THESE 4 TYPICAL PATTERNS OF

Amtico GRANITE TYPE Rubber Flooring



FOR SMART, COLORFUL FLOORS THAT ARE NOT EXPENSIVE . . .

Trent SHEET *Rubber Flooring*

FORTUNATELY, this modern sheet rubber flooring plays a DUAL role: Not only is Trent built to retain its marble-like freshness under years of severe service — but its ingenius processing has reduced its cost to a surprisingly moderate figure.

For Trent Sheet Flooring gives you all the features of Amtico Marbleized Tile — the same rich sheen and "decorator" colorings . . . the same unusual textures . . . the same carpet-soft resiliency . . . the same resistance to the tread of tramping feet . . . the same non-slip advantage. But because the installation expense is so low, the final cost is decidedly reasonable.

Consequently, Trent can be specified for both new and old buildings—homes, offices, schools, hospitals, banks . . . in truth, wherever its big "dual" features — permanently "alive" appearance and reduced cost — are both important factors.

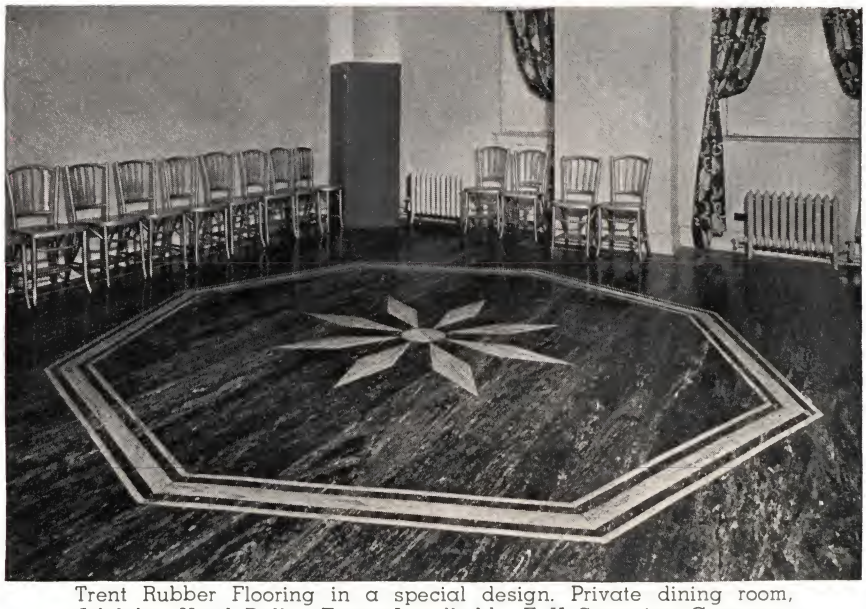
Wide Range of PLAIN COLORS, too

Trent

SHEET RUBBER FLOORING

REMAINS

IMPERVIOUS TO WEAR . . . COLORFUL . . . BRIGHT . . . YEAR AFTER YEAR . . .

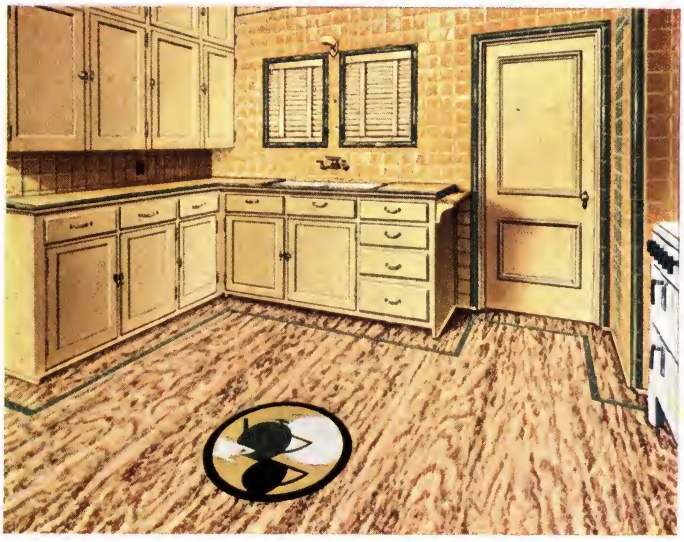


Trent Rubber Flooring in a special design. Private dining room, Adolphus Hotel, Dallas, Texas. Installed by E. Y. Sanguinet Company.

THE SECRET of Trent Flooring—its ability to hold its color and remain unaffected by hard, constant traction—is the way it is fabricated. Not only is Trent built DENSE throughout its entire structure—like Amtico Tile—but it adds an extra advantage: IT HAS A FABRIC BACKING.

Thus—with this special backing, this additional protection—Trent Sheet Rubber Flooring gives a tighter adhesion to the under-floor, an important point! . . . cuts and fits more easily . . . and stays "PUT."

Trent provides a basically correct background for this well appointed Cleveland office of the United Air Lines. Installed by Gellin Company, Cleveland.



No wonder Trent is so widely specified for interiors that otherwise would require a non-resilient type of covering! No wonder architects and decorators are favoring Trent for "difficult" installations with limited expenditures!

FOR WALLS . . . smart . . . colorful

New, easy to apply . . . Trent Rubber Wall Covering. The same rich colorings, the same fabric backing as Trent Flooring—but only 1/16-inch gauge . . . in a variety of smart color combinations. SAMPLES gladly.

For Years of Hard Service . . . 7000 sq. yds. of Trent Sheet Rubber Flooring in the new Public Lands Social Security Building, Olympia, Wash.

NOTE HOW SMOOTHLY *Trent* SHEET RUBBER FLOORINGS BLEND WITH THEIR SURROUNDINGS . . .

Trent Plain Sheet Rubber Flooring becomes an intrinsic part of this ultra-modern interior . . . the San Felipe Apartments, Houston, Texas.

Above: Trent Marbleized "follows through" the modern spirit in this interesting room.

Left: Trent Rubber Flooring is "tailored" to this colorful lounge. Penn Theatre, Washington, D. C.

IN THIS BROCHURE

We Present . . .

Amtico MARBLEIZED Rubber Tile

A veritable triumph in resilient floor covering . . . "the beauty of marble with carpet comfort" . . . in a wide range of rich textures. Also a group of softer two-toned effects widely favored for intimate interiors. Three thicknesses: 1/8, 3/16 and 1/4 inch. Sizes: 4 x 4, 6 x 6, 9 x 9 and 12 x 12 inch.

Amtico "GRANITE" Rubber Tile

A perfect simulation of granite or terrazzo flooring. Soft . . . quiet . . . non-slip. EXCLUSIVELY AMTICO! Two Thicknesses: 3/16 and 1/4 inch. Sizes: 4 x 4, 6 x 6, 8 x 8, 12 x 12 and 24 x 24 inch.

Amtico Rubber Tile in PLAIN Colors

A full array of the popular solid colors . . . brilliant . . . fascinating . . . for unusual effects. Three thicknesses: 1/8, 3/16 and 1/4 in. Sizes: 4 x 4, 6 x 6, 9 x 9, and 12 x 12 inch.

Trent MARBLEIZED Sheet Rubber Flooring

Same rich sheen and fresh colorings as Amtico Marbleized Tile. Easy to lay . . . inexpensive . . . a sturdy fabric backing for years of extra wear. Two thicknesses: 1/8, and 3/16 inch. 36 inches wide. 25 yards (approx.) to the roll.

Trent Sheet Rubber Flooring • PLAIN Colors

Thoroughly practical in every respect . . . especially attractive with contrasting borders or inlays. Two thicknesses: 1/8 and 3/16 inch. 36 inches wide. 25 yards (approx.) to the roll.

Trent Sheet Rubber WALL Covering

New . . . colorful . . . sanitary . . . unusually smart for both residential and commercial buildings. Fabric backing. Easily applied to any type of wall. One thickness: 1/16 inch. 36 inches wide. 25 yds. (approx.) to the roll.

AMERICAN TILE & RUBBER COMPANY

TRENTON, N. J.

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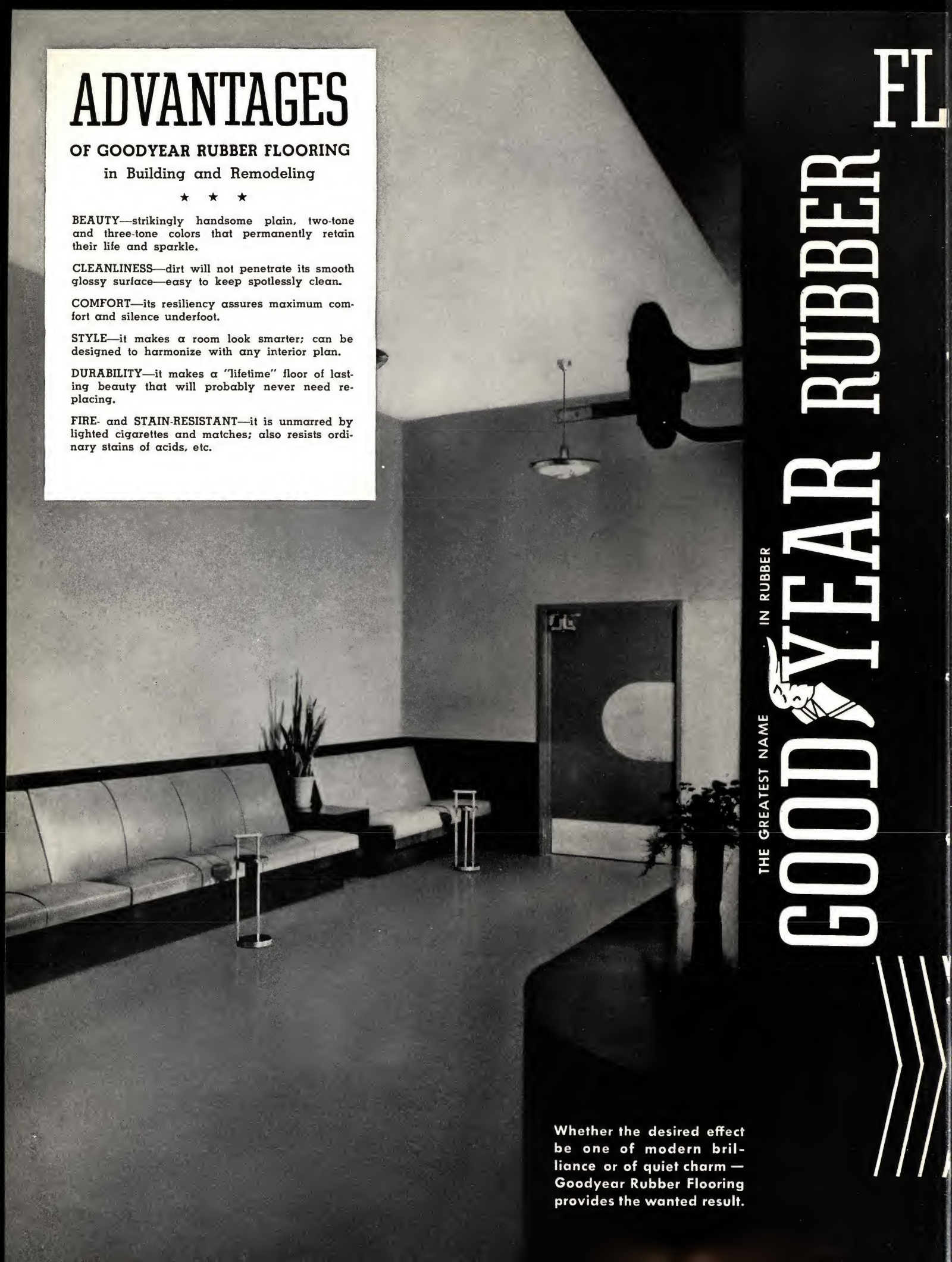
THE GREATEST NAME IN RUBBER

GOODYEAR

RUBBER FLOORING and WALL RUBBER



ADVANTAGES

OF GOODYEAR RUBBER FLOORING

in Building and Remodeling

★ ★ ★

BEAUTY—strikingly handsome plain, two-tone and three-tone colors that permanently retain their life and sparkle.

CLEANLINESS—dirt will not penetrate its smooth glossy surface—easy to keep spotlessly clean.

COMFORT—its resiliency assures maximum comfort and silence underfoot.

STYLE—it makes a room look smarter; can be designed to harmonize with any interior plan.

DURABILITY—it makes a "lifetime" floor of lasting beauty that will probably never need replacing.

FIRE- and STAIN-RESISTANT—it is unmarred by lighted cigarettes and matches; also resists ordinary stains of acids, etc.

THE GREATEST NAME IN RUBBER

GOODYEAR RUBBER FL

Whether the desired effect be one of modern brilliance or of quiet charm — Goodyear Rubber Flooring provides the wanted result.

OORING AND WALL RUBBER«

MANUFACTURED BY THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO, AND LOS ANGELES, CALIFORNIA

PROUD PRODUCTS

OF "THE GREATEST NAME IN RUBBER"

Goodyear Rubber Flooring has earned an outstanding preference by architects and builders for all types of residential and commercial installations.

The advantages it offers run the whole gamut of flooring virtues — from beauty of appearance to low cost of maintenance.

Available in a wide range of colors and color combinations, Goodyear Rubber Flooring enables the architect to devise floors that complement practically any original color scheme or decorative design.

The permanently beautiful surface it provides is resilient — both quiet and comfortable underfoot.

It neither stretches nor shrinks in service and can "take" severest strains of heavy traffic and climatic changes for years on end.

Goodyear Rubber Flooring comes in two types — RUBBER TILE FLOORING and WINGFOOT RUBBER FLOORING. Rubber Tile Flooring is supplied in individual blocks of specified thickness, size, shape, and colors. Wingfoot Flooring is produced in continuous lengths. The laid cost of Wingfoot Flooring is appreciably less than the cost of Rubber Tile Flooring, although there is no difference in the quality of the two types of flooring. The essential difference is that of form only.

● ● ●

And now . . . Goodyear has added a companion product to Rubber Flooring —

WINGFOOT WALL RUBBER

It is available in a variety of plain and two-tone colors especially developed for use on walls. This material offers limitless possibilities for original wall design and decorative effects.

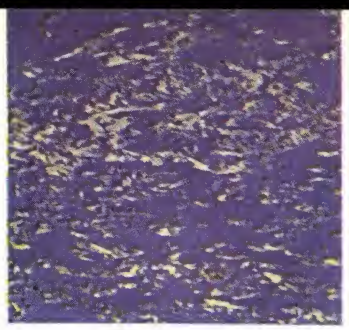
The tread of many feet—and the passage of many years—are powerless to dim the beauty of Goodyear Rubber Flooring.

(Right) First cost divided by length of service is the true judge of economy — and gives Goodyear Rubber Flooring the verdict of "the world's most beautiful *and* most economical flooring material."

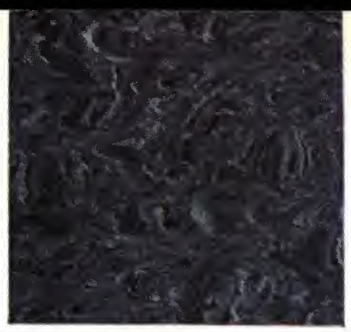
Where DOES GOODYEAR RUBBER FLOORING *Belong?*

• In PRIVATE HOMES • In BANKS • In HOSPITALS • In SCHOOLS and COLLEGES • In PUBLIC BUILDINGS • In STORES • In CHURCHES • In CLUBS • In HOTELS and BARS • On SHIPS • In GENERAL OFFICES • In RADIO STUDIOS

100 Plain Dark Blue



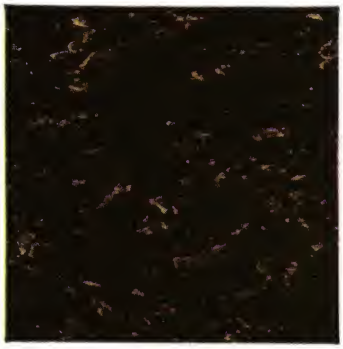
108 Blue-White



201 Two-tone Dark Blue Green

203 Light Blue Green-Black

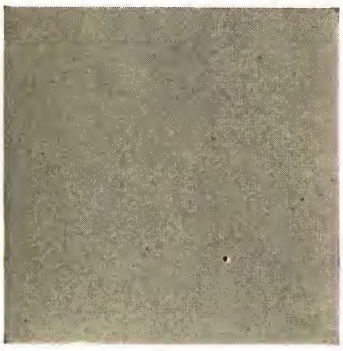
500 Three-tone Gray



423 Black-Red-Gold

422 Black-Green-White (Verde Antique)

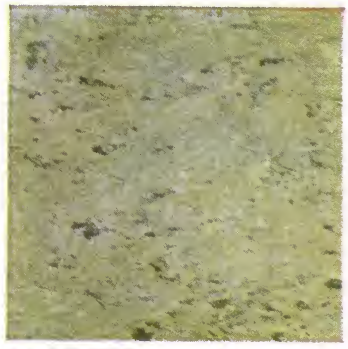
418 Two-tone Light Gray-Green



503 Plain Light French Gray

504 Light French Gray-Black

603 Medium Jade Green-Gray



611 Three-tone Light, Medium, Dark Cream

815 Cream-Light Brown-Dark Brown

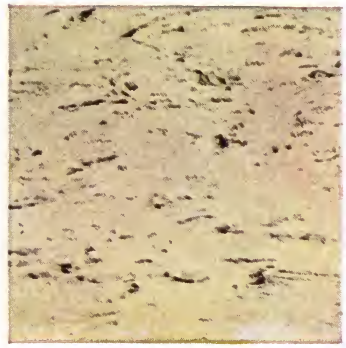
810 Cream-Pink-Brown

806 Cream-Gold-Red-Black

800 Plain Dark Cream

GOODYEAR Wingfoot Rubber Flooring and Goodyear Rubber Tile are made in a complete range of variegated and plain colors with border and feature strips which make it possible to create countless designs.

902 Plain White



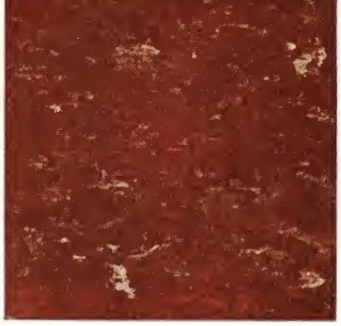
903 White-Black

NOTE: These colors are
ING ONLY. For Wall Rub

205 Two-tone Pastel Blue Green

314 Dark Red-Black-Gold

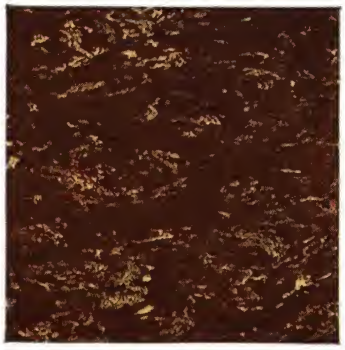
318 Light Red-Gray



320 Bright Red-Cream

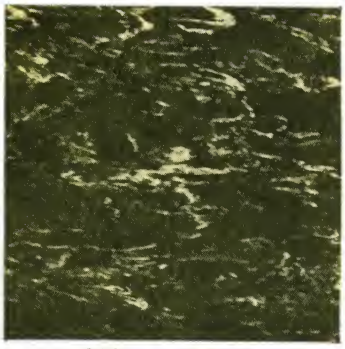
402 Black-White

400 Plain Black



322 Maroon-Gold-Black

321 Plain Bright Red



613 Green-White

700 Two-tone Dark Brown

701 Two-tone Dark Brown-Cream

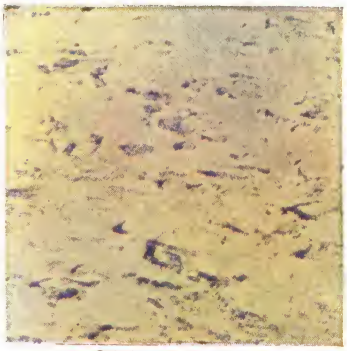
703 Medium Brown-Yellow-Cream

719 Plain Dark Brown

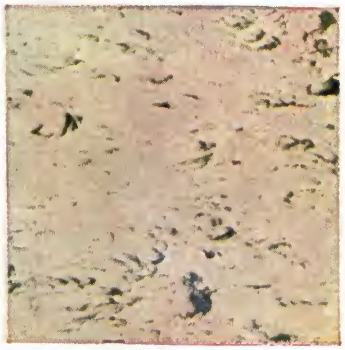
718 Yellow-Chocolate-White

717 Three-tone Light Brown

704 Plain Light Brown



904 White-Blue

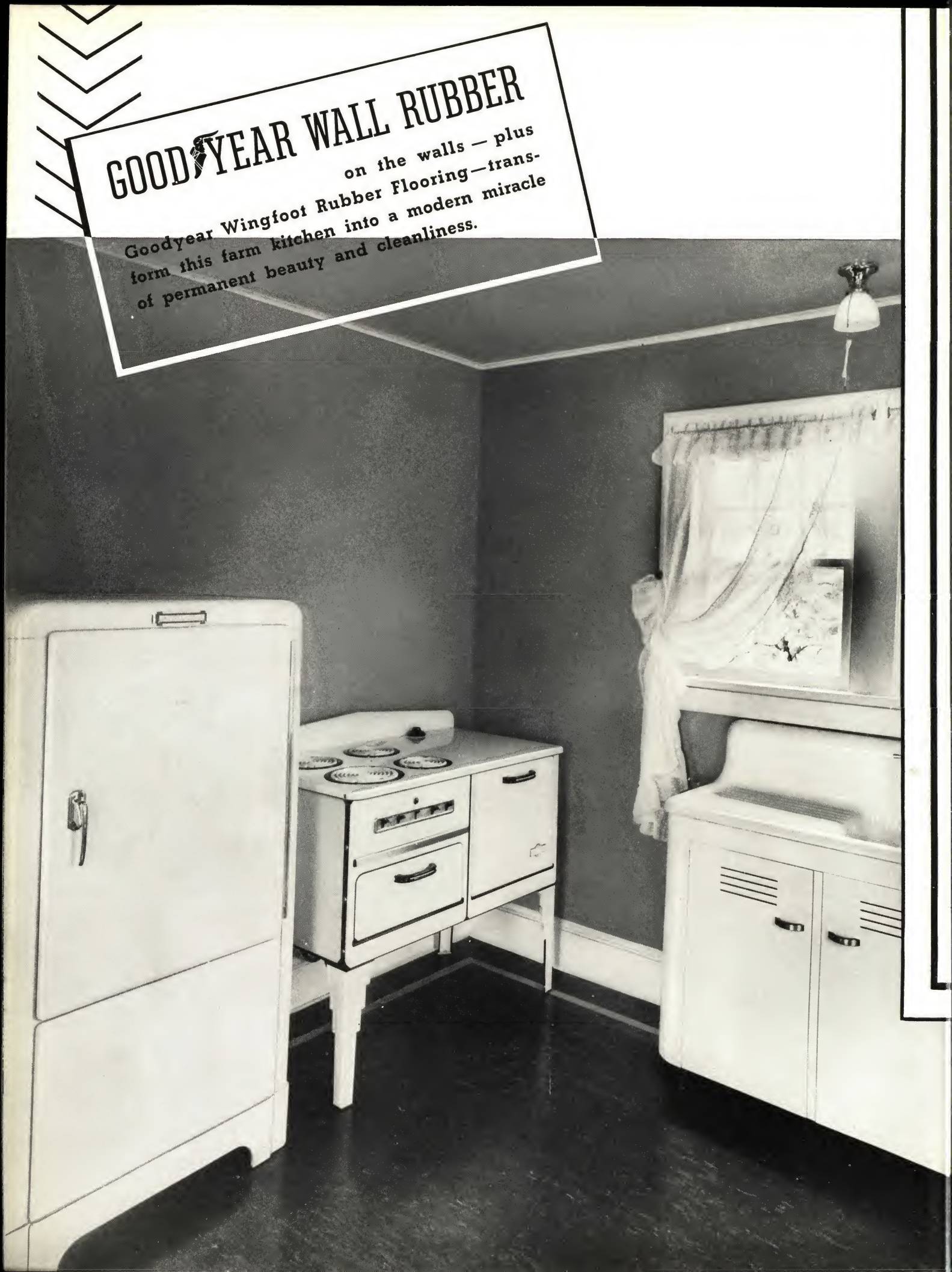


905 White-Black-Green

available in RUBBER FLOOR-

ber colors see next page.

Because of its more moderate cost, Goodyear Wingfoot Rubber Flooring is now being used for large room areas heretofore unavailable to rubber tiling at its higher cost. Many buildings are being floored throughout with Goodyear Wingfoot Rubber Floors.


GOODYEAR WALL RUBBER
on the walls — plus
Goodyear Wingfoot Rubber Flooring—trans-
form this farm kitchen into a modern miracle
of permanent beauty and cleanliness.

109 W

205 W

208 W

323 W

614 W

408 W

400 W

324 W

615 W

700 W

720 W

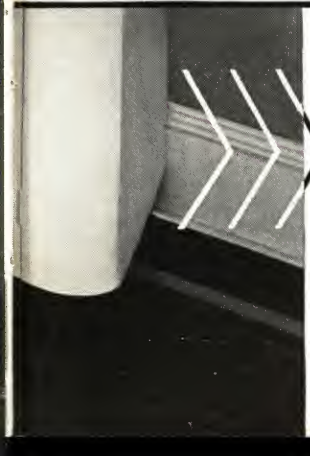
721 W

906 W

817 W

816 W

800 W



GOODYEAR WALL RUBBER

Goodyear Wall Rubber comes in many variegated and plain colors, is adaptable to any conceivable decorative or design treatment — and is easy to apply.

GOODYEAR RUBBER

SPECIFICATIONS

MANUFACTURER'S STANDARD GUARANTY ON RUBBER FLOORING AND WALL RUBBER

"We guarantee our product against defects provided our recommended cleaning instructions are followed and we will repair or replace any such defective product which is brought to our attention, in writing, within one year after date of completion of installation.

"We do not accept responsibility for any damages arising from defects or dampness in sub-floors or other surfaces which may occur after completion of installation."

Goodyear Wingfoot Flooring

(Made in 1/8", 3/16" and 1/4" Gauge)

Furnished in full rolls 25 to 35 yards long by 1 yard wide.

Goodyear Rubber Tile

(Made in 1/8", 3/16", 1/4" and 3/8" Gauge)

Standard Sizes

(Furnished with square edges only)

4" x 4"	9" x 9"	6" x 12"
6" x 6"	12" x 12"	9" x 18"

Right and left diagonal halves of these sizes. Also any unit larger than 4 ins. in either width or length or both that can be cut without waste from 36" x 36" or 36" x 48" slabs.

Border Material and Strips

(Made in 1/8", 3/16" and 1/4" Gauge)

Furnished in 1", 1½", 3", 6", 9" and 12" widths.

Specifications for Sub-floors

"All concrete underfloors to receive rubber floor, shall be finished true and even and free from high and low spots, 1/8, 3/16, 1/4 or 3/8 in. below the required finished floor level—depending on the thickness of the rubber flooring.

"Concrete shall be thoroughly dry and clean, and free from cracks and surface defects.

"Goodyear rubber floor shall be installed direct to concrete underfloors."

(Note: No Goodyear rubber floor should be installed on concrete floors below grade or at grade—unless there is a sufficiently ventilated air space below the concrete slab to prevent the condensation of moisture on the under surface of the concrete.)

"Good quality 30-pound bituminuous asphalt saturated all-rag felt shall be cemented to wood underfloors with good quality paste, before installation of rubber floors.

"All materials included in this specification shall be approved by THE GOODYEAR TIRE & RUBBER COMPANY, INC."

Specifications for the Installation of GOODYEAR WINGFOOT RUBBER FLOORS and GOODYEAR RUBBER TILE FLOORS

"All rubber floors to be furnished and installed under these specifications shall be manufactured by THE GOODYEAR TIRE & RUBBER COMPANY, INC.

"All coloring matter shall be of the highest quality. All pigments used shall be insoluble in water. All rubber flooring to be furnished shall be compounded and cured to a sufficient density to preclude the possibility of the floor creeping under traffic.

"As an extra precaution against the floor creeping or stretching under severe traffic a woven cotton fabric shall be properly vulcanized in the rubber flooring approximately 3/64 in. from the bottom surface.

"All rubber floors to be furnished to a tolerance in thickness not over .005 of an inch, plus or minus. The exposed surface of the rubber floor shall have a smooth plate finish.

"Rubber floors to be installed in a neat, workmanlike manner by mechanics experienced in the laying of rubber flooring.

"Rubber floors to be installed in an adhesive of finest quality, approved by the rubber flooring manufacturer.

"After floors have been installed and before the adhesive has thoroughly set, the surface of the rubber shall be rolled both ways with special rollers, and all excess cement on surface of rubber floors or along joints shall be removed and the surface thoroughly cleaned.

"At points where rubber floors terminate against other types of flooring, brass or bronze separating strips shall be used.

"All rubber flooring shall carry the standard guarantee as outlined by the Rubber Flooring Division of the Rubber Manufacturers Association, Inc.

"The rubber flooring contractor will submit to the architect a typical sample of the material he proposes using and the material shall conform in all respects to that specified herein."

★ ★ ★

GOODYEAR WINGFOOT WALL RUBBER

(Made in 1/16" Gauge)

Furnished in full rolls 25 to 35 yards long by 1 yard wide, and in strips 1", 1½", 3", 6", 9" and 12" wide.

Specification for Side-Walls.

NEW WALLS

Walls to receive GOODYEAR WINGFOOT WALL RUBBER should be a good quality plaster with a well bonded white coat finish. When dry the plaster should be smooth and firm. Any rough spots or trowel marks should be removed with sandpaper.

OLD WALLS

Any loose paint, wall paper or cold water paint, should be removed from old walls. Old walls should be free from grease and dirt, or other substances that might prevent a perfect bond.

Any loose plaster should be removed and replaced. Holes and cracks should be filled. Any high spots on the old plaster walls should be removed by sanding.

WALL BOARDS

Hard-pressed construction wall boards with a smooth outer surface or plywood, when properly erected, provide a satisfactory backing for WINGFOOT WALL RUBBER.

Specifications for the Installation of Wingfoot Wall Rubber

All wall rubber to be furnished and installed under these specifications shall be manufactured by The GOODYEAR TIRE & RUBBER COMPANY, INC.

All coloring matter shall be of the highest quality. All pigments used shall be insoluble in water.

Wall Rubber shall be approximately 1/16" in thickness and shall have a fabric backing.

Material shall be installed with an adhesive approved by the manufacturer.

All seams shall be double-cut. Where rounded corners are specified, seams shall be at least six inches away from any corner.

After application of the Wall Rubber, the material shall be thoroughly rolled, starting at the center of each strip and working toward the edges to eliminate all air pockets.

FLOORING AND WALL RUBBER

ACCESSORIES

★ GOODYEAR RUBBER FLOORING ACCESSORIES ★

COVE BASE

(Furnished in 32 in. lengths only)

Height above Finished Floor	Wall Gauge	Toe Gauge
2"	3/16" 1/4" 3/8"	3/16" 1/4" 3/8"
3"	only 3/8"	3/16" 1/4" 3/8"
4"	3/16" 1/4" 3/8"	3/16" 1/4" 3/8"
5"	3/16" only	3/16" 1/4"
6"	3/16" 1/4" 3/8"	3/16" 1/4" 3/8"
6"	1/8" only	1/8" 3/16" 1/4"

INSIDE AND OUTSIDE CORNERS

Height Above Finished Floor	Wall Gauge	Toe Gauge
4"	3/16" 1/4" 3/8"	3/16" 1/4" 3/8"
4" Hospital	3/16" 1/4" 3/8"	3/16" 1/4"
6"	3/16" 1/4" 3/8"	3/16" 1/4" 3/8"
6"	1/8" only	1/8" 3/16" 1/4"

FEATHER EDGE COVE

Overall Height	Wall Gauge
1½"	1/8"

PLINTHS

(Maximum length 30 in.)

	Widths	Thickness
Plain Plinths.	4¾", 5¼", 5⅜", 5½", 5¾", 6"	⅞"
Offset Plinths.	(4⅛")	

WAINSCOT CAPS

	Width	Gauge	Length
Plain	2½"	1/4"	32"
*Slotted	3"	7/16"	32"

*Slotted for 3/16 in. wainscot.

THRESHOLD OR DOOR SADDLES

Total width 5 in.—For use with either 3/16 in., ¼ in. or ⅜ in. floor.
Total rise above finished floor, ⅛ in.
Maximum length, 44 in.

EXTERNAL WAINSCOT CORNERS

3/16 in. gauge only—32 in. high.
Right angle with 1½ in. width on each side.

LONG STAIR TREAD

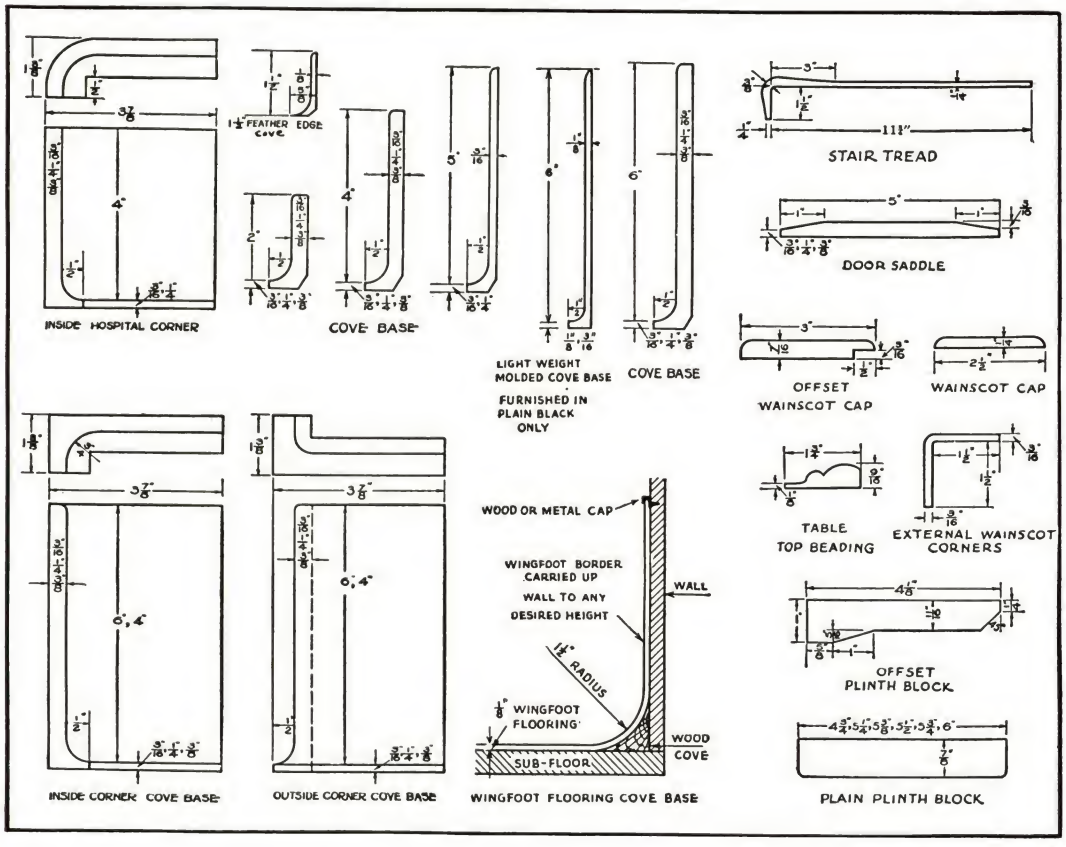
¼ in. gauge only—any length up to and including 7 ft.—11¾ in. wide, 1½ in. nosing.

RISER FOR LONG TREAD

¼ in. gauge only—any length up to and including 7 ft.—11¾ in. wide, 1½ in. nosing.

TABLE TOP BEADING

32 in. long, 1½ in. wide—Round Beading.
¾ in. thick.



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The Goodyear Tire & Rubber Company, Inc., Akron, Ohio—and Los Angeles, California

HAMILTON RUBBER MFG. CO.

Tailor-Made Mats of Character for Theatres, Hotel Lobbies, Elevators

TRENTON, N. J.

Rubber Mats of Individuality

We have been identified with the manufacture of quality rubber products since 1870. Abreast of the demand for Rubber Mats of character and individuality we produce for architects and decorators mats of special design.

Illustrations shown below are sections of large installations and are intended to harmonize with the modern treatment of a theatre, hotel lobby, store entrance or public building.

Hamilton Tailor-Made Mats are ideal for elevators. They are made to size, are long wearing—non-slippery and are easily removed for cleaning as it is not necessary to cement to floor.

A booklet showing many suggestive designs will be mailed to architects on request.

Dimensions and Colors

Maximum width 72 in., lengths as desired. We recommend that large mats be furnished in sections to facilitate handling. Made in ¼, ⅜, and ½-in. thicknesses; perforated and corrugated. Also made smooth with or without perforations.

Some Prominent Installations

R.K.O. Theatres—Jefferson, Proctors; (New York) Columbia, Orpheum, Strand, Victory, Shoreroad, Bushwick, Colonial, Chestnut, New Rochelle, Franklin, Proctors; (Newark) Alhambra, Greenpoint.

Trans Lux Theatres—Bell (Brooklyn), Clover (Baltimore), Strand (Staten Island).

Thirteen Theatres in New York and Vicinity—Mosque, Monroe, Symphony, Square, Dyckman, Union, Jewell, Regun, Palestine, Loyal, Kimbel, Decatur, Crest.

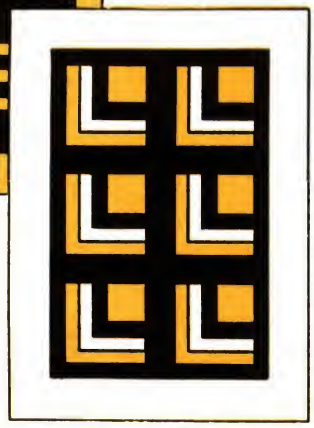
Miscellaneous—U.S. Coast Guard Cutter "Champlain"; Bloomingdale Department Store and American Tobacco Company (New York); Congress Theatre (Saratoga Springs); Frederick Loeser & Company (Brooklyn).

Other Flooring Products

We manufacture the standard gauges of "Hamiltile" Block Type of Rubber Tiling and "Capitile" Sheet Rubber Flooring in rolls, featuring our exclusive factory finish known as "Traffic Proof Finish." This improved finish results in a much easier flooring to maintain.

Samples will be sent to interested architects and others.

Section of Design No. 105



Section of Design No. 107

Section of Design No. 110

Special Design and Striking Colors in Rubber

Details carried out in the ship design shown will convey the possibility of reproducing your special designs in rubber.

63T

Standard Perforated Mats

Standard perforated mats made in standard gauges.

Colors: Black, Gray, Maroon, Red, White, Blue and Green.

Borders and letters of contrasting colors—vulcanized as an integral part of the mat—will not come apart.

MEMORANDA

HOOD RUBBER COMPANY, INC.

Manufacturers of Hood Rubber Floor Tiling

WATERTOWN, MASS.

HOOD RUBBER FLOOR TILING

Special Hood processes produce rubber tile flooring of unusually great density, resulting in exceptional durability without loss of resiliency. The surface of Hood Tiling is smooth, nonporous, and has a natural lasting sheen, obtained without using greasy or sticky materials. This means greater ease and economy in cleaning, as well as better appearance at all times.

Hood Rubber Tile Flooring may be specified for many types of buildings, with the confident expectation that it will outwear ordinary floor coverings by a wide margin, and cost less in the long run.

The many colorings and sizes of Hood Tile make it possible to design floors suitable for various types and sizes of interiors.

Booklet, showing standard colors and typical designs, forwarded upon request.

Sizes and Thicknesses

Standard Thicknesses—⅛, 3/16, ¼ and ⅜ in.
Standard Sizes—4x4, 6x6, 9x9, 12x12, 12x6, 18x9 in.
Standard Border Sheets—48x36 in.
Internal and External Corners—4, 6 and 8 in. high.

Children's Hospital, Boston, Mass.

Cove Base—2, 4, 6, 8 in. high, 36 in. long.
Wainscot Caps—2 in. high, ⅜ in. thick and 3 ft. long.
Stair Tread and Nosing—In one piece;

	Thickness	Tread	Nosing	Length
No. 1	¼″	13″	1½″	36″ and 42″
No. 2	9/32″	12″	2 ″	72″

Thresholds—5½ in. wide, ½ in. high and 4 ft. long.
Plinth Blocks—6⅜ in. high, 4 in. wide and 1 in. thick.

Standard Colors of Hood Tiles

201 Black White
202 White Black
203 Dark Gray Mixture
204 Napoleon Gray
205 Black Mixture
206 Red Mixture
207 Blue White
208 White Blue
209 Tennessee Pink
210 Dark Verde Antique
211 Light Verde Antique
212 Green White
213 White Green
214 Black Gold
218 Walnut Mixture
219 Cream Mixture
227 Tan Mixture
231 Ivory Mixture
239A Dark Brown Mixture
240A Light Brown Mixture
241 Black Mahogany
242 Mahogany Black
243 Medium Gray Mixture
244 Light Gray Mixture
246 Cream Beige
247 Morocco
249A Black Green
250A Slate Green
252 Titian
253 Black Red Gold
254 Red Gold Black
255 Blue Blue
101 Black

SUGGESTED SPECIFICATIONS

New Wood Sub-floors—All wood underfloors should be double floors, the top floor to be not less than ¾ in. thick, tongue and groove, kiln-dried flooring, boards not more than 3 in. wide, thoroughly blind and surface nailed, and finished true and level to ⅛ in. plus the thickness of the Hood Tile below the finished floor line.

Old Wood Sub-floors—Replace worn and decayed boards with new lumber, thoroughly surface-nail all loose and springy boards, and sand floor smooth and even.

Installation

Wood Floors—Before installing Hood Rubber Tile, cement 1¾-lb. asphalt saturated felt paper to wood floor with linoleum cement, in opposite direction to underfloor, with seams butted, not lapped; felt to be carefully fitted at wall lines. Roll felt thoroughly with 150-lb. 3-section roller after applying to floor. Then cement Hood Tile as on concrete floors.

Concrete Sub-floors—Concrete floors to be steel-troweled to a smooth, level finish to the thickness of the tile below the finished floor line. All concrete must be absolutely dry, thoroughly bonded to fill, and must not have a chalky, scaly or sandy finish. Concrete laid in contact with ground either on or below grade shall be thoroughly membrane-waterproofed. Expansion joints or cracks to be filled with plaster of paris, or other crack filler, level with floor surface. If concrete floors have been painted, all paint shall be removed before installing tile.

Concrete Floors—Cement Hood Rubber Tile direct to concrete with special waterproof rubber tile cement, spread evenly in a thin coat on floor with 12-in. plasterer's steel trowel. Lay out each space carefully, with borders, if used, of suitable width to surround center area of field tiles without cutting tiles, except in irregular shaped spaces. Take up very slight discrepancies in room dimensions in border. Scribe, fit, and cement border material along two adjacent walls, being careful that inside edges of border are cut vertically, and meet at an exact right angle in corner of room. Then cement field tile, starting at corner where borders adjoin. Spread cement on not more than 10 sq. ft. of floor area at one time. Push tile firmly into place with a sliding motion so that cement gets into joints. Before cementing the last rows of tile on two remaining sides of room, lay these tiles loosely over border already scribed and fitted to these walls. Then cut border to perfect fit along outside edges of these tiles, and cement remaining tile and border. Roll thoroughly in both directions. Clean surplus cement from surface of tiles, using cloth moistened with denatured alcohol. Do not wash floor until five days after installation is completed.

KLEISTONE RUBBER COMPANY, INC.

Manufacturers of Rubber Tile
758 Cutler Street, WARREN, R. I.
DISTRIBUTORS IN PRINCIPAL CITIES

Product

KLEISTONE RUBBER TILE for floors and walls in veined and solid colors.

KLEISTONE RUBBER TILE FLOORS

Description

Kleistone Rubber Tile—A resilient, noise deadening flooring of the highest quality standards, combining permanence with unlimited decorative possibilities. Its reasonable initial cost and low upkeep expense make it an ideal floor material wherever soft floors are desirable.

Being without fibrous content, it is almost entirely non-absorbent and its smooth surface, with proper care, permanently retains the original polished finish. Colors and markings go through to the back, and the entire thickness of the tile is made of the same high quality composition as the surface.

For Walls—Kleistone Tile is unusually well adapted for use on walls, because of its sanitary qualities and permanent freedom from any maintenance cost.

Sizes and Thicknesses

Standard Thicknesses—$\frac{3}{16}$", ¼" and ⅜".

Standard Sizes—4½" x 4½", 6" x 6", 9" x 9", 12" x 12", 6" x 12", 9" x 18".

Also any size unit larger than 4½" x 4½" that can be cut without waste from 18" x 18", 24" x 24", 34½" x 34½" or 28" x 69½" slabs; also diagonal half tile of any of the above standard sizes.

Special sizes that cannot be cut from above size slabs without waste will be billed at square footage of next larger standard size.

Border Strips—½", 1", 1½", 2", 3", 4", 6" wide; 24", 34½" or 69½" long.

Border Slabs—24" x 24", 18" x 34", 34½" x 34½" and 18" x 69½" to 28" x 69½".

Table Tops—Furnished in any width up to 34½" not over 34½" long.

Counter Tops—Furnished in any width up to 28", not over 69½" long.

Colors

Kleistone Rubber Tile is regularly made in 27 veined color effects, and in 4 solid colors as listed below. Additional colors can be manufactured, as required, to harmonize with any special decorative scheme.

Emblems, special design work and cutouts may be had in any colors to conform with architect's drawings.

Plain

303 Black
304 Red
308 Green
309 Dark Gray

Marbleized

202 Verde Antique
205 Red Paisley
207 Dark Sienna
209 Black and White
210 Black and Gold
211 Gray Paisley
213 Napoleon Gray
214 Brown Napoleon
215 White, Red and Black
216 White, Green and Black
217 Light Sienna
218 White and Black
219 Pink Tennessee
220 White and Blue
221 Blue and White
222 Green and White
223 Red, White and Black
225 Brown and Buff
226 Chocolate Brown
227 Buff, Black and Brown
228 Brown, Gold and White
229 Gray, Green, White and Black
230 Brown Paisley
231 Black Paisley
232 Light Brown and Yellow
233 Dark Red and Black
234 Dark Brown and Light Brown

Warranty

The life and satisfactory service secured from rubber tile floors being dependent upon their usage and care, no definite time warranty can be given, but we warrant our tiling against defects of material or manufacture, provided that our recommended cleaning agents and methods are used and we are given written notice of such defects within one year after completion of installation.

Samples and Service

Samples and literature mailed on request. Our Service Department is prepared to forward information regarding proper methods of installation, to make suggestions regarding designs, or furnish other pertinent information.

Specifications

Standard Specification for Rubber Tile Floors—(1) Rubber tile flooring indicated on drawings or as listed herein, shall be Kleistone Rubber Tile, manufactured by KLEISTONE RUBBER COMPANY, INC., Warren, R. I., or other tile of equal quality in the opinion of the architect. The rubber tile shall contain no fibrous material and shall be practically non-absorbent. Thickness of tile shall be .... inches, (insert $\frac{3}{16}$, ¼ or ⅜ in.) and all tiles furnished shall be of exactly equal thickness, cut true to size with square, clean-cut edges. The colors and markings of the rubber tile shall run through the entire thickness of the material and the tile shall be made of the same composition throughout. Colors and sizes of tile and border to be selected by the architect.

(2) The cement used in setting the rubber tile shall be waterproof and shall be "Topco" Cement manufactured by Templar Oil Products Co., Brooklyn, N. Y., or other make of waterproof cement approved by the architect.

(3) The contractor installing the rubber tile flooring shall be experienced in this class of work and shall employ only mechanics thoroughly familiar with the laying of rubber flooring. Before commencing work, the contractor shall ascertain whether the subfloor is suitable for the rubber tile work. If it is not suitable he shall not proceed with his work until all

Lobby of The Crown Hotel, Providence, R. I.
Kleistone Rubber Tile Floor installed

defects are remedied. Tile and border shall be accurately fitted against all walls, pipes and other permanent projections. Borders, wherever possible, shall be approximately equal in width on all sides of each space. After setting, tile shall be thoroughly rolled in both directions with roller weighing not less than 150 lbs., and not more than 12 in. long. All cement shall be removed from the surface of tile and the floors shall be left broom clean by the tile contractor.

Specification for Concrete Underfloors to Be Covered with Rubber Tile—*(Include in mason's specifications for floors).* Concrete subfloor to receive rubber tile shall have a top layer 1 to 1½ in. thick, composed of 1 part portland cement to 2½ parts clean screened sand, troweled to a smooth sidewalk finish and free from high and low spots .... inches (insert $\frac{3}{16}$, ¼ or ⅜ in.) below the required finish floor level.

Joints shall be cut through top layer approximately 20 ft. apart, following the lines of floor beams and girders. After the concrete has set, the joints are to be filled and troweled even with top surface. No lines shall be struck on the surface, and it shall be delivered to the rubber tile contractor clean, dry and free from foreign material.

Cement hardeners and so-called integral waterproofings should not be used in concrete over which rubber tile is to be installed. They tend to retard evaporation of the moisture content.

In order to insure rapid drying, allow all possible ventilation in rooms where rubber tile floors are to be laid.

Concrete which has been frozen, or has a chalky or scaly surface, or which is not well bonded to fill, must be removed and replaced with top coat as above.

All concrete and masonry laid in contact with the ground, on or below grade, shall be thoroughly waterproofed by the membrane method.

Specification for Wood Underfloors to Be Covered with Rubber Tile—*(Include in carpenter's specifications for floors).* In spaces where rubber tile is called for in the plans and specifications, lay double floors; the top or finished floors to be ⅞ in. tongued and grooved, not more than 4 in. wide, driven tight, well nailed and finished true and level .... inches (insert $\frac{3}{16}$, ¼ or ⅜ in.) below the required finished floor level; joints and butts to be planed or scraped smooth.

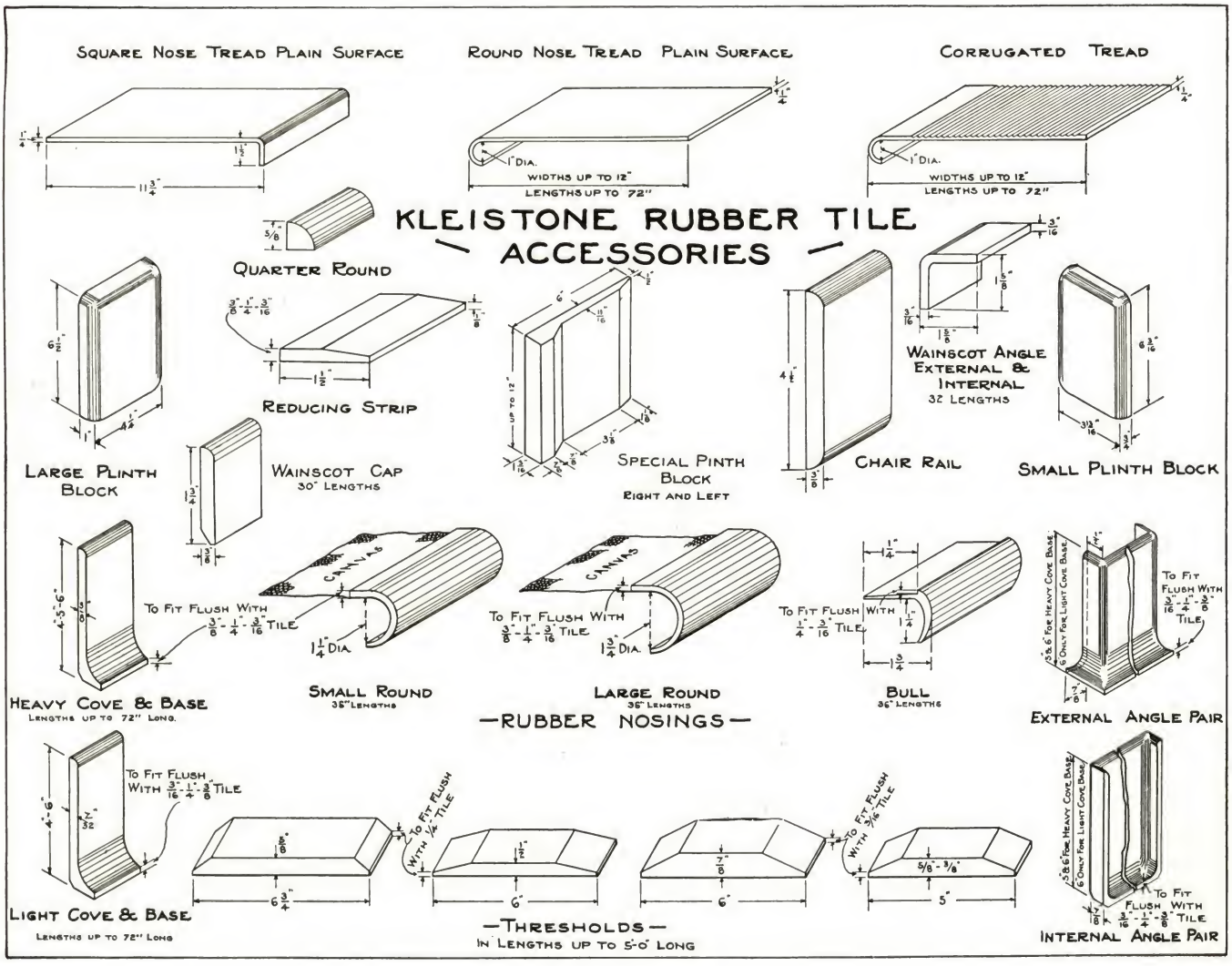
Old Work—In preparing old wood floors to receive rubber tile, remove all badly worn or decayed boards, and boards containing knotholes or loose knots, and replace with new lumber, in accordance with wood flooring specifications. Old floors to be thoroughly surface-nailed to secure all springy boards, loose butts or joints; joints or butts then to be scraped, planed or sanded smooth and even.

Note: In laying rubber tile floors over wood subfloors, both old and new, it is necessary to provide an interlining between the wood and the rubber to prevent any possible expansion or contraction of the wood floors from being communicated to the rubber tile. A light weight canvas or heavy cotton sheeting should be carefully tacked with special ½-in. flat headed tacks over the entire area of the wood floor. Care must be taken to drive the tacks well home so that the heads do not protrude above the surface of the canvas. Tacks should be scattered over the entire area of the floor on about 3-in. centers. 30-lb. Asphalt Saturated Deadening felt, cemented to the wood underfloor with linoleum cement, may be substituted for the canvas. The deadening felt must be carefully rolled to secure adhesion to the underfloor at all points, and the Rubber Tile is cemented to the surface of the felt with waterproof cement.

Specifications for Ground Over Which Rubber Cove and Base Is to Be Installed—Plaster, wood or other material against which base or wainscoting is to be installed shall be carried down to and finished square with the underfloor, making a clean, straight right angle with same, and free from lumps, dirt or other obstructions.

Installations

Thousands of Kleistone Rubber Tile Floors give satisfactory service in a wide variety of buildings. We will be glad to furnish a partial list of such installations for any locality in the United States.



SERVICISED PRODUCTS CORPORATION

"Syra-Bord" Tongued and Grooved Rubber Tile Flooring

6051 West 65th Street

CHICAGO, ILL.

For Servicised Custom Built Roofing, Greenhouses and Industrial Flooring, see File Index

Syra-Bord Tongued and Grooved Rubber Tile

Syra-Bord is manufactured from a pure plantation rubber base with the admixture of no reclaimed rubber nor reinforcing fibre. It is moulded in ten foot lengths fabricated from individual tiles of any selected colors, vulcanized together. The strips are tongued and grooved on both sides and ends. These exclusive features of Syra-Bord assure an interlocked floor surface preventing curling, creeping, warping, and tiles from coming loose.

The new rubber content together with other scientifically selected inert materials produce a long wearing, resilient, sanitary, fadeless floor, suitable for hospitals, offices, institutions, churches, banks, stores, and fine homes.

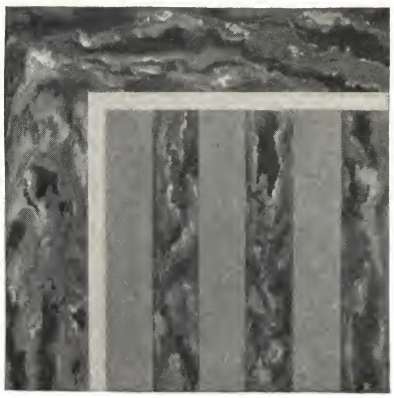
Colors—Syra-Bord is a custom-built floor, an innumerable selection of color combinations in marbleized effects possible from fourteen base colors. The coloring in mottled designs runs through the full thickness of the tile.

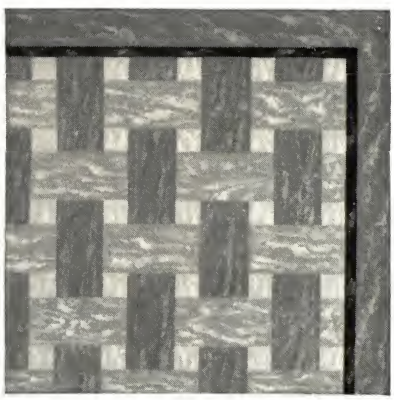
Sizes and Gauges—Syra-Bord is manufactured in strips or boards ten foot long, built up of 6x6 in., 9x9 in., or 12x12 in. tiles, in $\frac{3}{16}$ or $\frac{1}{4}$ in. gauges.

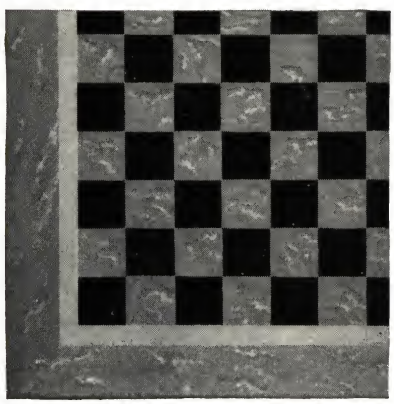
Servicised Rubber Tile

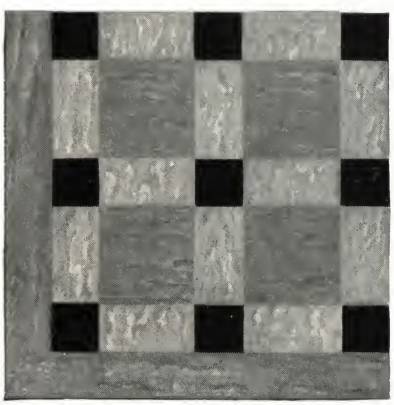
Servicised Rubber Tile is identical to Syra-Bord in composition and is furnished in the same fourteen base colors, and color combinations. It is manufactured in individual tiles, but these tiles are not tongued and grooved. The standard gauge of Servicised Rubber Tile is $\frac{1}{8}$ in. and it has been developed to meet the requirements of those projects where unduly heavy traffic is not encountered. Because of the careful compounding and uniform curing of this tile, it is destined to render long service and will retain its original beauty throughout. Like Syra-Bord it will not fade in sunlight, is resistant to alkali, most acids, and is easily and economically maintained. Although the standard gauge of Servicised Rubber Tile is $\frac{1}{8}$ in. it can also be furnished in $\frac{3}{16}$ in. thickness.

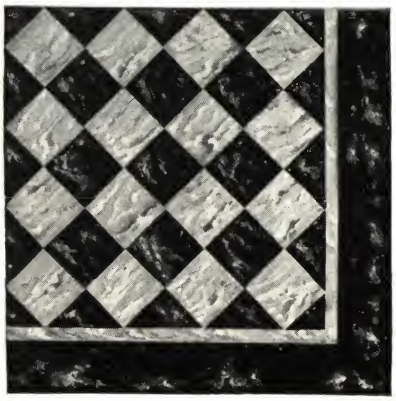
Sizes and Gauges—Gauges, $\frac{1}{8}$ and $\frac{3}{16}$ in. Squares, 4, 6, 9, 12, 18 and 24 in. Oblongs, 6x12, 9x18 and 12x24 in. Specials 24x9.0 in.











Servicised Rubber Wall Covering

Servicised Rubber Wall Covering compounded with the same ingredients and with the same scientific care as Syra-Bord and Servicised Rubber Tile fulfills the demand for permanent, decorative wall coverings, impervious to water, alkali or sunlight. In kitchens, bathrooms, dens, living rooms, offices, hospital rooms, playrooms, distinctive designs can be created to accord with individual taste. Wood graining, knotty pine, marbleized or pastel effects are produced to harmonize with the decorative scheme employed.

Servicised Rubber Wall Covering is manufactured $\frac{1}{16}$ in. in thickness in sheets 24x9'-0". It is cemented to any type of wall surface and in addition to its beauty is permanent and easily maintained.

Accessories—Cove Base in any plain or marbleized color is manufactured 4, 5, or 6 in. high to conform to $\frac{1}{8}$, $\frac{3}{16}$ or $\frac{1}{4}$ in. gauge flooring.

Borders are available in widths from 1 to 24 in.

Feature strips are cut as narrow as 1 in.

Beveled edging in colors to match the flooring is made in lengths 3 in. wide, 42 in. long to conform to $\frac{1}{8}$, $\frac{3}{16}$ or $\frac{1}{4}$ in. gauge.

Capping for drain-board assemblies or rubber wall covering is made in lengths of 54 in. in any desired color.

Ogee Moulding is furnished in lengths of 10'-0" in all colors.

Nosing for drain-board assemblies is moulded in lengths of 42 in. in all colors.

Stair Treads with a moulded nosing are furnished in 42 in. lengths. Corrugated treads are made in 8 in. width, plain surface treads in 12 in. widths. Stair Treads without the moulded nosing can be furnished in lengths up to 10'0" in any color.

Stair Tread

Servicised Cork-Rubber Tile

Cork Rubber Tile is manufactured from finely divided cork and rubber vulcanized together. This mixture of two materials, each of which has by itself rendered satisfactory service under traffic, produces a floor combining the finest qualities of each, yet at moderate cost.

Resilient, artistic, light but durable, silent and resistant to indentations, Cork Rubber Tile is specific under conditions of heavy traffic, and where quietness is imperative. Hospitals, infirmaries, libraries, courtrooms, offices and homes are ideal prospects for this product.

Cork Rubber Tile is manufactured in $\frac{3}{16}$ or $\frac{1}{4}$ in. gauge, and in tile sizes 6x6, 9x9, 12x12, 18x18, 9x12, 9x18 and 12x18 in. in two shades of natural cork brown, light and dark.

Special Floor Designs—Syra-Bord Flagstone patterns are manufactured in 12x12 in. units in $\frac{3}{16}$ or $\frac{1}{4}$ in. gauge with any combination of colors desired.

Nursery patterns with animal insets are made in 12x12 in. units, $\frac{3}{16}$ or $\frac{1}{4}$ in. gauge.

Special patterns in silhouettes or modernistic designs can be fabricated according to specifications.

Installations — Servicised Rubber Floors and Cork Rubber Tile can be laid over any type of sub-floor, wood, concrete, composition or steel, and is cemented in place with waterproof rubber tile cement. Specifications for the preparation of sub-floors of various types can be obtained from SERVICISED PRODUCTS CORPORATION, Chicago, Illinois.

Maintenance — Servicised Resilient Floors are easily and economically maintained with a standard water dispersed wax. The use of cleaners and waxes with an oil base is prohibited as the oil content is a solvent for rubber.

Distribution — Servicised Resilient Floors and wall coverings are sold and installed by authorized flooring contractors throughout the United States. The names of reliable distributors in any locality can be obtained from SERVICISED PRODUCTS CORPORATION, Chicago, Illinois.

VOORHEES RUBBER MFG. CO., INC.

125 East 46th Street, NEW YORK, N. Y.

VOORHEES AIR-PAD SHEET RUBBER FLOORING

Quiet — Resilient — Beautiful — Durable — 6 Foot Width

Voorhees Air-Pad — a carefully processed combination of sheet rubber and sponge rubber—is the most advanced development in floor covering. Due to its unique construction, Voorhees Air-Pad combines the beauty and color-softness of rubber with unsurpassed resilience and quietness.

Standard construction is in continuous lengths, *6 feet wide* and $\frac{3}{16}$ inch thick. A variety of beautiful colors are available, making possible an infinite number of decorative treatments.

Advantages

(1) Quietness—The smooth surface and the soft cushioning sponge rubber base of Voorhees Air-Pad Sheet Rubber Flooring absorb the sounds of footsteps and other traffic to a remarkable extent. *See the results of an exhaustive "noise test" conducted by Massachusetts Institute of Technology, details of which follow.*

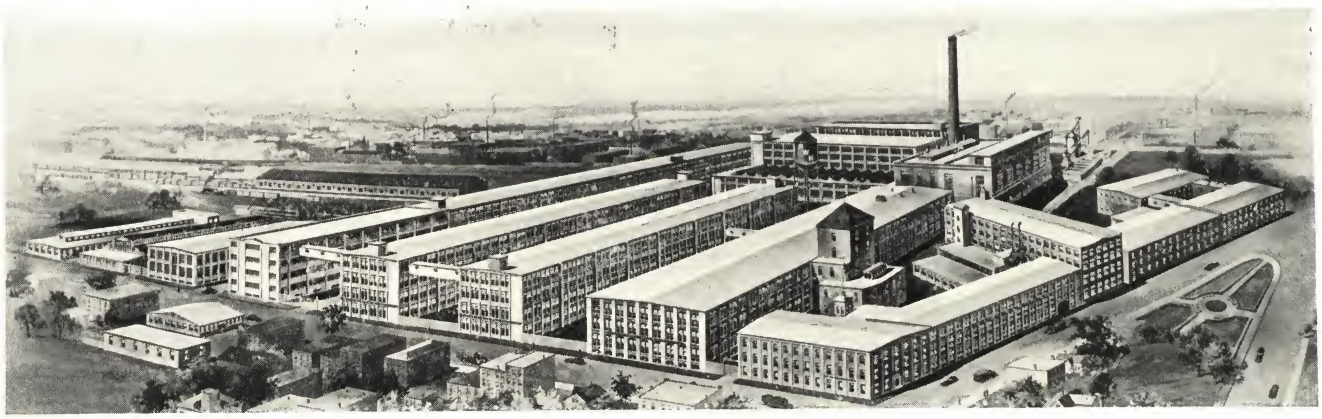
(2) The Ease and Softness of a Deep Pile Carpet—The constant jarring of nerves and the fatigue resulting from walking on hard unyielding floor surfaces is entirely eliminated with Voorhees Air-Pad with inevitable benefits to health.

(3) Years of Hard Usage—The yield of the sponge rubber under traffic reduces abrasion of the material, insuring long wear at the surface. *See also results of a test for ageing and deterioration of the sponge rubber used in fabricating Voorhees Air-Pad conducted by the Boston Woven Hose & Rubber Company* *on page 4.*

(4) Easily Maintained—Voorhees Air-Pad Sheet Rubber Flooring is extraordinarily easy to keep clean.

(5) Practically Slipproof—Because of its unusual resilience, Voorhees Air-Pad offers a much greater foot purchase than other types of resilient coverings, affording much greater safety.

(6) Adaptable to All Types of Architectural Design — The variety of colors in which Voorhees Air-Pad is available make it readily adaptable to any type of interior.



Plant of the Boston Woven Hose & Rubber Company, Cambridge, Mass.

In this modern completely equipped plant Voorhees Air-Pad Sheet Rubber Flooring is carefully manufactured to Voorhees' exact specifications.

SCIENTIFICALLY "SOUND-TESTED"
BY ONE OF AMERICA'S LEADING TECHNICAL INSTITUTIONS

The following report and the letter and graph reproduced below give the results of a test conducted by Massachusetts Institute of Technology to determine the relative noise-generating qualities of the various types of resilient floor coverings.

"These measurements were made to determine the relative noisiness of various types of resilient floor covering materials. As there appears to be no standard procedure for making such measurements, it was necessary to find how to produce a noise which would give consistent readings on any given sample and which would represent as nearly as possible the type of noise which might arise in ordinary use. It seemed logical to take the sound of footsteps as the most representative type of noise. The sound caused by footsteps may arise in three different ways: by setting the floor in vibration from the impact of the step, by setting any part of the shoe in vibration from the impact, or by setting the air directly in vibration when it is forced suddenly from between the sole of the shoe and the floor. This last possibility may be disregarded in making comparative measurements of this kind since the noise, as far as the flooring is concerned, will depend only on the nature of the surface which is the same for all the samples tested, that is to say, all samples have flat, non-porous surfaces.

"Several methods were tried for producing a satisfactory standard impact. The procedure finally adopted was as follows: A cylindrical piece of hard wood, 1¼ in. in diameter and 14¾ in. long, was suspended at one end by a flexible string 7 in. above the sample. The stick was held horizontal and the free end, which was rounded, was allowed to drop onto the center of the sample. The impact caused both stick and sample to be set in vibration. The resulting noise, though louder than that of an average footstep, appeared to vary with the different samples about as the sound of footsteps. This type of impact also represents other common sources of noise, such as the moving of chairs. The advantage of using a cylindrical stick with a rounded end dropped in this manner was that the measurements on a given sample were far more consistent than those with any other type of impact which was tried.

"The sound of the impact was picked up by a microphone placed with the front edge of the housing flush with one edge of the sample. All samples were cemented to the concrete (terrazzo) floor in a heavily damped room which was insulated from external noise. There was therefore, no possibility of obtaining misleading results due to reflectings in the room or to extraneous transmitted sounds. The samples were all of the same size, 9 in. x 9 in.

"The apparatus for measuring the sound pressure built up at the face of the microphone comprised: amplifiers, a voltage divider, and an indicating device. Two forms of indicating devices were tried: a rectifying voltmeter, and a cathode ray oscillograph. The meter appeared to give readings more representative of the annoyance value of the noise and was therefore used in the test. The method of measuring was to adjust the voltage divider until the sound of an impact gave a standard deflection on the indicating device. It was then possible to calculate the relative voltage produced by the microphone and hence the relative sound pressure due to the impacts.

What the Test Showed

"The results are tabulated below. The sound from the bare concrete floor is taken as the reference. The tabulated sound pressures are therefore the ratios between the sound pressures produced by an impact on the samples and the sound pressure produced by a similar impact on the bare floor. Results are also tabulated in decibels (db) above or below the reference level of the bare floor noise.

By definition: $$db = 20 \log \frac{PS}{PF}$$, where

PS = pressure of sound from sample, and
PF = pressure of sound from bare floor.

"The results are also shown graphically with the sound pressures referred to a reference corresponding to the threshold of hearing when the sound on the bare floor is 25 decibels above this threshold. This value is based on measurements of noise in non-residential buildings. The graph then represents to a first approximation the relative loudness of the noise which would be produced if the floor were covered with the various materials tested.

"It will be seen at once that the Voorhees Air-Pad, sample No. 5, gives a remarkably good performance in the reduction of noise."

TABULATION OF SOUND MEASUREMENTS

Sample		Relative sound pressure	db (Decibels)
0	Terrazzo	1	0
1	3/16-in. Rubber Tile	0.98	—0.1
1A	3/16-in. Rubber Tile	0.94	—0.4
2	1/8-in. Sheet Rubber	0.865	—1.2
2A	1/8-in. Sheet Rubber	1.11	0.8
2B	Voorhees Conqueror 1/8-in. Sheet Rubber	0.80	—1.4
3	3/16-in. Linoleum	1.07	0.6
3A	1/8-in. Linoleum	1.27	2.1
3B	6MM Linoleum	0.80	—1.4
4	3/16-in. Asphalt Tile	1.43	3.2
4A	3/16-in. Asphalt Tile	1.40	3.2
5	Voorhees Airpad 3/16-in. Sheet Rubber Flooring	0.21	—13.4

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

CAMBRIDGE A. MASS. December 3, 1936.

Mr. J. C. Walton,
Boston Woven Hose & Rubber Co.,
29 Hampshire St.,
Cambridge, Mass.

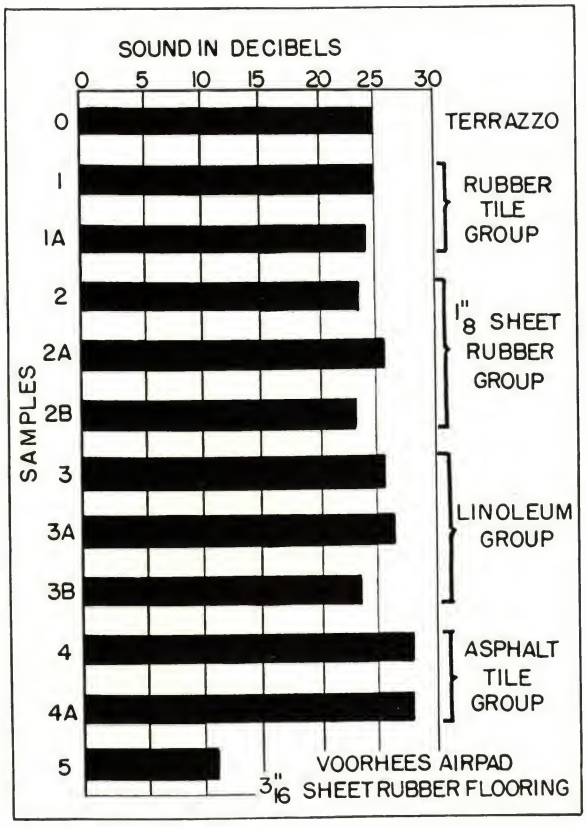
Dear Mr. Walton:

I submit herewith my report on the noise generation tests of the various samples of resilient floor coverings compared with VOORHEES AIR-PAD rubber flooring. The results are interesting to me on account of the large range of values obtained.

I hope that the report gives the information that you wished.

Very truly yours,

R. D. Fay.



CONSTRUCTION

Voorhees Air-Pad Sheet Rubber Flooring is manufactured under the continuous cure method. This method, an exclusive Voorhees feature, permits the production of the *unusually wide (6 ft.) strips* in continuous lengths of from 60 to 90 ft. with no danger of "weak" or "rough" spots to cause unsatisfactory wear.

The Voorhees method of manufacture actually vulcanizes the sponge rubber to the underside of sheet rubber flooring. Thus any danger of separation is positively eliminated and a long lasting floor covering is assured.

APPLICATION

The soft-toned beauty, the ease under foot, and the easy maintenance of Voorhees Air-Pad is making it increasingly popular for residential use. Though suitable for any room, it is especially desirable for kitchen, hall, bathroom, bedroom, nursery, foyer and dining room floors; for sinks, mouldings, cabinet and dresser tops. For sinks and dresser tops, a variety of beautiful metal edgings are available.

The same features mentioned above, though more especially its acoustical value, make this unusual flooring a frequent selection for hospital floors—particularly corridors.

For stores, for churches and auditoriums, and for large offices the many valuable qualities of Voorhees Air-Pad as a decorative, practical, fatigue resisting, yet economically priced flooring material are responsible for its use with ever-increasing frequency.

VOORHEES AIR-PAD BLENDS WELL WITH ANY DECORATIVE THEME

The four illustrations on this page give some conception of the extraordinary beauty of floors covered with Voorhees Air-Pad Sheet Rubber Flooring. Because it is produced in *6-ft. wide* strips of continuous lengths, and because of the variety of colors available, an infinite number of attractive designs are possible.

With the exceptional beauty and color softness of this fine flooring material and the latitude afforded by its unusual width, any skilled artisan with a flair for harmonious and artistic effects can do wonders in executing outstanding and unusual floor patterns designed by the architect.

We are glad at all times to consult with architects in the designing of unusual floor treatments. Specific information as to colors and treatments is always available on request.

A Modern Foyer with Voorhees Air-Pad Floor Covering in an unusual design treatment.

VOORHEES ACCESSORIES

The Voorhees line of accessories is built to harmonize with Air-Pad Flooring, and a wide selection is available to meet the requirements of the architect. Included are lightweight flexible, plain black Cove Base and Accessories, including Moulded Corners and Rubber Mouldings; Marbleized Stair Treads, Risers and Landing Mats. Write us for additional information, including colors and sizes available.

From the standpoint of both beauty and practicability, Voorhees Air-Pad makes an ideal floor covering for an office and reception room.

Above, right:
An atmosphere of quiet serenity prevails in this library, where footfalls are muffled by a floor of Voorhees Air-Pad.

The soft, quiet beauty of this attractive flooring is particularly appropriate for churches.

Left:
This beautiful floor in an exclusive florist's shop illustrates the value of the Voorhees 6-ft. widths in creating large all-over designs.

RESULT OF A TEST FOR AGEING AND DETERIORATION

The following report from the Technical Superintendent of the Boston Woven Hose & Rubber Company, gives an excellent idea of the permanent strength of the sponge rubber used in Voorhees Air-Pad Sheet Rubber Flooring:

"Numerous samples of sponge rubber used in fabricating Voorhees Air-Pad have been subjected to oxygen bomb ageing. The oxygen bomb ageing test, as you know, was developed to determine the life of various rubber products, and it has been established that 10 hours in the oxygen bomb at 300 pounds per square inch oxygen pressure at 70° C. is equivalent to one year of natural ageing. Sponge rubber samples have been aged in the oxygen bomb up to 200 hours, the equivalent of 20 years, and have been found to be still flexible and resilient.

"Since it is impossible to express deterioration by tensile strength measurements, in the case of sponge rubber, a valuation of aged samples has been made by compressing the same and noting the ability of the sample to return to approximately its original dimensions. Using a weight of one kilogram per square inch to compress the sponge rubber and noting the thickness of the sample before and after this test, we find that sponge air-pad has a permanent compression of 1.8% when first made. After 50 hours in the oxygen bomb, this material has a permanent compression factor of 2.2%. This shows that after ageing equivalent to five years, the permanent compression is virtually the same as that of the new product."

ARCHITECTURAL SPECIFICATIONS FOR VOORHEES AIR-PAD SHEET RUBBER FLOORING

(1) Specification for Material—Where indicated on the Schedule of Finishes, Floors shall be of Voorhees Air-Pad Rubber Flooring. It shall be $\frac{3}{16}$ inch over all, plus or minus .010. Voorhees Air-Pad shall be constructed of $\frac{1}{8}$-inch marbleized rubber flooring and $\frac{1}{16}$-inch sponge rubber with reinforcing fabric as per samples on file in the office of the architect. Voorhees Air-Pad in 6-foot (6′) widths, where spaces permit. Colors and Designs as selected by the architect. The rubber shall have a natural lustrous surface.

(2) Preparation of Floors—Over which Voorhees Air-Pad is to be installed—

(a) Cement—All cement surfaces that are to be covered with rubber shall be hard trowled finished cement, dry, true, level and out of wind and shall be suitable for a wearing surface without score marks. *(If score marks are in place, these shall be filled by the flooring contractor before the installation of sheet rubber.)* [*Not suitable for concrete on grade.*]

(b) Wood—All wood floors that are to be covered with rubber shall be well nailed and properly seasoned flooring not to exceed 2½-inch face measurement. After wood flooring has been installed, same shall be machine sanded to a true, even plane.

(3) Specification for Felt—All felt used under rubber shall be 15 pound saturated with asphalt, waterproof and of a dense material, especially manufactured for this purpose, same as sample on file with the architect. No variations in this specification will be permitted.

(4) Specification for Laying—All surfaces that are to be covered with rubber shall be inspected by the flooring contractor in advance of delivery of material to the job. Any irregularities shall be reported to the architect, in writing, before installation. All installation work done shall be considered an acceptance of the underflooring by the flooring contractor. Underfloors shall be first cleaned and properly prepared for installation.

(a) Concrete Subfloors—Rubber Flooring shall be laid and cemented with Voorhees C-1133 Cement, lapping all seams one inch (1″) to allow for double cutting. Rolling not recommended. Seams shall then be cut and borders fitted as may be designated on the drawings. There shall be no cross seams in the field in spaces 75 ft. long or less. Any cement on the surface shall be immediately removed. The floors shall be properly waxed and protected after laying by the contractor and turned over in perfect condition.

(b) Wood Subfloors—All Wood Floors shall be covered with 15 lb. saturated felt of approved make. Felt shall be installed at right angles to the joints of the floor. Saturated felt shall be cemented with linoleum paste, all seams lapped and double-cut to insure proper joints. It shall be thoroughly rolled and after rolling carefully, checked to eliminate any possible "air-trapping". *Then proceed with installation of Voorhees Air-Pad as outlined under (a) Concrete Subfloors.*

(c) Marble-Terrazzo-Ceramic Subfloors — The flooring contractors shall fill all cracks and joints. Cover subfloor with 15 lb. saturated felt of approved make, lapping seams and double-cutting to insure proper fit. Saturated felt must be cemented with Voorhees C-1133 Cement, thoroughly rolled and carefully checked to eliminate any possible "air-trapping". *Then proceed with installation of Voorhees Air-Pad as outlined under (a) Concrete Subfloors.*

Caution—***(a)*** All linoleum paste and Voorhees C-1133 Cement shall be applied with a saw-tooth cut steel trowel. Teeth shall be cut to a depth of approximately $\frac{3}{64}$ in. and spaced approximately $\frac{3}{64}$ in. apart.

(b) Proper care shall be taken that in cutting seams the saturated felt paper shall not be cut.

(5) Specification for Edgings and Nosings—All edges at doorways or other openings where rubber ends shall be fully protected by the installation of proper edgings as may be approved. All stair treads to be covered with rubber shall have suitable nosings properly installed. Nosings to be selected by the architect in advance of awarding of contract.

(6) Specification of Voorhees C-1133 Cement—

(a) It shall be of a casein-latex base.

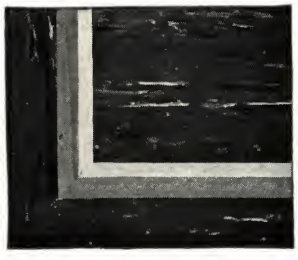
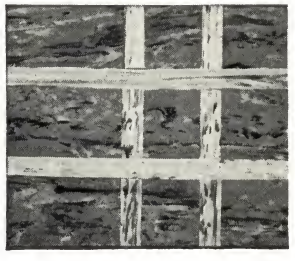
(b) It shall be sufficiently waterproof after drying to resist the action of water.

(c) When set will be permanently flexible.

(d) Of a consistency that will trowel readily, giving an approximate coverage of 200 square feet to the gallon.

(e) Shall be absolutely free from alcohol.

Samples—Samples of cement and rubber flooring shall be submitted for approval.

Typical Border Treatments

WRIGHT RUBBER PRODUCTS CO.

Manufacturers of Rubber Floor Tile, Cove Bases, Stair Treads, Table and Counter Tops and Paving Blocks

RACINE, WIS. CHICAGO, ILL., Room 13113 Merchandise Mart

Description

WRIGHT RUBBER TILE
Rubber Only Material That Withstands Tire Road Wear

Wright Rubber products are composed of carefully selected materials scientifically compounded in a thoroughly modern plant by a company that has specialized in the manufacture of rubber flooring products exclusively since 1921.

All tiles are ground to uniform thickness and cut to accurate sizes with square, clean cut edges.

Due to its inherent characteristics, Wright Rubber Tile is adaptable in every type of building where long-wearing, practical, quiet, beautiful floors are desired. It is unusually suitable for hospitals, schools, churches, public buildings, institutions, hotels, banks, offices and stores. The wide range of colors—plain, mottled combinations to resemble marble and grained woods, special inlaid decorative designs—and the unlimited variation in arrangements possible with Wright Rubber Tile make it ideal for the home. Each installation individually harmonizes with the finish and decorations.

Characteristics

Wright Rubber Tile is sufficiently tough and dense to resist the impact and abrasion of traffic over a long period of years. When properly installed, will remain permanently flat without creeping, shrinking, curling or warping. In addition to its wear-resisting qualities, it is *resilient, non-absorbent, a non-conductor and fire resisting.*

Types

To meet every requirement in rubber tile flooring—both as to cost and wear-resisting qualities—Wright Rubber Tile is made in three types of varying thicknesses. The colors and markings in *all* types extend through the entire thickness of the tile—all are similar in appearance.

Wright Tile—The highest grade rubber tile made. Recommended for use where heavy traffic is expected. Made in ⅛, $\frac{3}{16}$, ¼ and ⅜-inch thicknesses and in all sizes.

Wrightex—A quality tile comparable in laid price to battleship linoleum and the better grades of marbleized asphalt tile. Made in ⅛-inch and $\frac{3}{16}$-inch thicknesses only.

Prefelt-set Wrightex—A new idea by Wright that brings rubber tile floors within the price of good grade linoleum—Wrightex Tile pre-set on a felt base. Cost of laying reduced to a minimum. In quarter yard (18x18-inch) units only—in one color, or two colors of four 9-inch squares and sixteen 4½-inch squares—medium weight.

Sizes

Wright Tile—4x4, 6x6, 9x9, 6x12, 12x12, 9x18 inches. Borders—12x36 and 18x36 inches. Wrightex—4½x4½, 3x6, 4½x9, 6x6, 9x9, 9x18, 18x18 inches. Borders—18x24 and 18x36 inches.

Bases—Straight or Cove—42-inch lengths—4, 5 and 6-inch heights.

External Corners—For 6x$\frac{3}{16}$-inch cove base only.

Stair Treads—42x12x¼ inches with nosing; 18, 24, 30 or 36x12x⅛ inches.

Thresholds—42x3x¾ and 42x5½x½ inches.

Plinth Blocks—4¼x6¼x⅞ and 3⅞x6¼x⅞ inches.

Quarter Round and Wainscot Capping—42-inch lengths.

Wainscot Trim—(Outside angles) 18-inch lengths.

General Specification Data

A clean, sound, smooth, true surface without indentations or projections is imperative for every kind of subfloor or sidewall. Dust and dirt will impair the cement bond.

Note: Rubber Tile should not be laid (a) over unexcavated areas whether above or below grade; (b) over wood floors attached to sleepers set in concrete fill; (c) in hotel or restaurant kitchens near cooking or dishwashing equipment where deposits of heavy grease are prevalent.

Wood Subfloors—Shall be double floors of kiln dried, sound, matched flooring laid close and thoroughly blind nailed to bearings. Finished layer should not be less than $\frac{25}{32}$ inch thick or more than 3¼-inch face (1x4-inch stock). Allow tile thickness plus $\frac{3}{32}$ inch from subfloor surface to finished floor level.

Concrete Subfloors—Shall be structurally sound and hard, free from scale or foreign deposits. They shall be "bone dry" and have a smooth, steel troweled surface. Allow tile thickness plus $\frac{1}{16}$ inch from subfloor surface to finished floor level.

Preparing Subfloor—All wood subflooring and where ⅛-inch tile is to be used on concrete, the subflooring shall be covered with 30-lb. asphalt saturated flooring felt (including Prefelt-set Wrightex), accurately fitted with edges carefully butted. Cement felt to wood in a full bed of linoleum paste and roll with 150-lb. roller to expel air bubbles.

Plaster Surfaces—Shall be laid to accurately set base and wainscot cap grounds carefully rodded and screeded and troweled to a hard, smooth surface. They shall be "bone dry."

Installing Rubber Tile—Each tile of Wright Tile or Wrightex and each unit of Prefelt-set Wrightex shall be set in a full bed of waterproof cement with joints flushed full by sliding it into position. Tile shall be laid true to line and pattern in accordance with approved shop drawings. Before setting cement has hardened, roll the surface in two directions with 150-lb. roller. Before surplus cement has hardened on the tile surface clean off thoroughly with a rag moistened with alcohol.

Where rubber tile is applied against plaster surface, size the plaster with a thin coat of waterproof cement. Allow cement to dry before installing tile.

Bases, wainscot caps, etc., shall be bradded to wood grounds in addition to cementing.

Service Department

Experienced factory service is accessible to architect and contractor. Complete working drawings, specifications and estimates will be furnished on receipt of blue print giving necessary dimensions. Color charts, suggested designs and samples will be sent on request. Our Service Department will assist in solving any flooring problem.

Warranty

The WRIGHT RUBBER PRODUCTS CO. guarantee their products fully in accordance with the current warranty of the Rubber Association of America.

Church of the Visitation, Detroit, Mich.

A Few Wright Installations

Bullock's Inc., Los Angeles
University of Illinois, Urbana, Ill.
High School, Park Ridge, Ill.
Delco-Remy Corp., Anderson, Ind.
Stock Exchange Bldg., Los Angeles
Petrolagar Laboratory, Inc., Chicago
Cook County Nurses' Home, Chicago
Veterans' Hospital, Albuquerque
Shrine of Little Flower, San Antonio
All Saints Cathedral, Milwaukee
Supreme Court Building, Nashville
Alton Memorial Hospital, Alton, Ill.
St. Mary's Hospital, Long Beach, Cal.
Wisconsin General Hospital, Madison
State Baby Cottage, Sparta, Wis.
Girls' Industrial School, Oregon, Wis.
Milwaukee County Hospital, Milwaukee
Downer College Library, Milwaukee
Sherman Park Branch Library, Chicago

Southwestern Bell Telephone Co., St. Louis, Mo.

CORK INSULATION CO., INC.

155 East 44th Street

NEW YORK, N. Y.

CORINCO CORK TILE FLOORING, STAIR TREADS, RISERS AND WAINSCOTING

Extra Comfort, Beauty and Safety

From the sanitary standpoint as well as from the viewpoint of safety and comfort, Corinco Cork Tile—whether applied on floors or stairs, or used as wainscoting—is unexcelled. Here, for the first time, is a floor that can be mopped up with clear cold water without injury to either the floor or finish, for, due to the high density of the tile, it has been possible to develop for it a finish known as Corinco Permanent Finish, easily applied, long lasting, grease and oil resistant and non-skid. No more waxing or polishing is necessary.

Then, too, this cork tile withstands years of hard wear. When figured over a period of years, it easily proves its economy.

In addition to its practical values, Corinco Cork Tile has an unusually soft, warm texture that is highly valued by the architect. Consequently, Corinco finds unusual favor in modern interiors for its wide range of decorative possibilities.

Corinco Cork Tile is especially suited to living rooms, dining rooms, foyers—in fact, any part of the home. It is widely used in institutions and public buildings of all types.

Complete details, specifications, and estimates on request.

Flooring

Corinco Cork Tile flooring is soundproof, draftproof, and waterproof.

Its non-skid property prevents even small rugs from sliding—adding greatly to the safety features every home should possess.

Corinco flooring is available in any desired pattern, as well as in special designs.

Stair Treads

Stair treads and risers made of Corinco Cork eliminate necessity of carpeting the stairs. Treads are silent and safe. There is no scuffing of rims as on painted or varnished wood risers. No splintered nosings for mops or cloths to catch in. Stairs and landings covered with Corinco Cork Tile blend harmoniously with the surroundings and provide an atmosphere of quiet dignity.

Wainscoting

Corinco Cork wainscoting is extremely modern—yet restful to the eyes. It creates a feeling of comfort, and is particularly desirable because it is non-resonant, and therefore sound absorbing. This quality of sound absorption, added to the beauty and warmth of appearance, makes Corinco Cork wainscoting a highly appreciated integral part of any home.

MUNDET CORK CORP.

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For other Mundet products, including Cork Insulation and Cork Bulletin Board, see File Index

"JOINTITE" CORK TILE FLOORING

Mundet "Jointite" Cork Tile is manufactured in two thicknesses, namely $\frac{5}{16}$ and $\frac{1}{2}$ in.

Mundet "Jointite" Cork Tile is composed of the very best selected cleaned and screened cork shavings. These shavings are placed in moulds of the proper depth to produce the tile thicknesses desired and are subjected to tremendous pressure to insure the proper density for floor use. The moulds are then placed in an oven maintained at a relatively high degree of heat. This heat allows the rosin in the cork shavings to liquefy and acts as a binder for the shavings, thus no foreign substance is needed to hold the shavings together and the natural properties of the cork is not impaired in any way.

"Jointite" Cork Tile is produced in three shades, all of which are brown in color, some light, some medium and some dark. These shades are obtained by governing the period of baking. Proper designs and arrangements of an artistic nature can be obtained by laying the tile in the different shades.

Ideal for

Corridors, halls, vestibules, ramps, stair treads, hospitals, schools, colleges, railroad stations, libraries, telephone rooms, offices, gymnasiums, churches, bathrooms, bedrooms, sleeping porches, nurseries, banks, theatres, courtrooms, art galleries. museums, etc.

Uses and Advantages

(1) Comes in various sizes, suitable for any floor.
(2) Does not shrink, swell or warp.
(3) Only absolutely pure cork used in its manufacture.
(4) Immune to grease, ink and most liquids.
(5) Cannot catch or absorb dirt or moisture.
(6) Easily cleaned, washable with soap and water.
(7) Varying shades of color are created by varying the temperature when baking. No coloring matter is used.
(8) Cannot splinter, tear, corrode, rot or crumble.
(9) Easy to walk upon due to its natural elasticity.
(10) Hard heels on Mundet "Jointite" Cork Tile are noiseless.
(11) Cosy and warm owing to its insulating qualities.
(12) Restful to the eye as well as to the ear.
(13) Highly compressed, hence strong, firm and durable.
(14) Not slippery, even when wet.

Sizes

12x36 in. is standard size. We also make standard 6, 9 and 12-in. squares; special 3, 4 and 5-in. squares; 3x18, 4x18, 6x18 and 9x18-in. border strips; and 9x36, 6x36, 6x12, 4x36, 4x8, 4x12, 3x12, 3x9 and 3x6-in. oblong strips.

Cove Base

We furnish Mundet "Jointite" Cork Tile Sanitary Cove Base in all heights.

Specifications

All cork tile stair treads and cork tile floors to be $\frac{1}{2}$ or $\frac{5}{16}$-in. thick cork tile.

The tile to be highest grade pure cork throughout, solid, compressed, properly baked. There must be no forcing substances whatever in the tile. Only high grade, waterproof, elastic cement shall be used in applying the tile. All joints to be securely and hermetically cemented.

Where wood is used as a base under tile, nothing inferior to tongued and grooved flooring $\frac{7}{8}$ in. thick, 6 in. maximum width, shall be used to support Mundet "Jointite" Cork Tile. It must be well fitted, tight, firmly nailed, smooth and level.

Where cement is used as a base under tile, it must be of a nailing quality and it shall be at least 1 in. thick and shall be made of 5 parts of acceptable clean screened sand, and 1 part fresh cement. It must be troweled smooth. Allowance must be made for $\frac{1}{2}$ or $\frac{5}{16}$-in. thickness of tile. Do not lay cork tile before the concrete has set and dried.

Note (1): **Nosing**—Mundet "Jointite" Cork Tile is adaptable to any type of nosing on stair treads.

Note (2): **Cove Base**—The wall and floor must make a true and smooth right angle with each other so that the Mundet "Jointite" Cork Tile Cove Base will fit evenly throughout with both the wall and floor. There must be no foreign lumps or dirt on the surfaces. Surfaces may be of any standard acceptable backing—wood, plaster, cement, etc.

The Norwood Telephone Exchange, Cincinnati, Ohio—Flooring of "Jointite" Cork Tile

ARMSTRONG'S

FLOORS AND WALL COVERINGS

for Homes and Public Buildings

1938 EDITION

LINOLEUM – LINOWALL – LINOTILE – CORK TILE – RUBBER TILE
ACCOTILE – CORK CARPET – LINOFLOR – MASTIC ARMOFLOR

ARMSTRONG CORK PRODUCTS COMPANY
LANCASTER PENNSYLVANIA

11
70

The Only Complete Line of Resilient Flooring

ARMSTRONG manufactures and offers to the architect the *only* complete line of resilient flooring materials—Linoleum, Linotile, Accotile, Cork Tile, Rubber Tile, Cork Carpet, Linoflor, and Mastic Armoflor—as well as Linowall, a linoleum-type wall covering, and Cork Tile Wainscoting. Each of these products is *guaranteed by a company with a seventy-eight-year record of dependability and manufacturing skill.* Since it is able to offer the best type of resilient flooring for each flooring problem, Armstrong can make unbiased suggestions to architects and builders. In addition, it supplies these materials in grades and gauges for every pocketbook, and supplements them with complete specifications and accessories for efficient installation and maintenance.

Advantages—Resilient floorings possess many advantages unobtainable in hard floorings. They are quiet. They are comfortable. They are less likely to crack or chip; and when damaged by some unusual accident, they are easier and less expensive to repair. From the standpoint of durability, resilient floorings have proved their merits under severe traffic conditions in a wide variety of buildings. In each type mentioned above, except Printed Linoleum, the colors run through the full thickness of the resilient composition. Maintenance is inexpensive and consists merely of daily sweeping and occasional washing and waxing.

As a medium of design, resilient flooring materials offer exceptional possibilities. Almost any design that can be drawn with a pencil can be executed in linoleum or in resilient tiles, which are available in a wide variety of colors, patterns, and marble effects.

Distribution—Armstrong's Linoleum and Linowall are sold by department stores, furniture stores, and other retailers of home furnishings and floor coverings, as well as by linoleum contractors in all parts of the United States.

Armstrong's Resilient Tiles are sold and installed by authorized flooring contractors. The names of reliable distributors in any locality can be obtained from the Armstrong Cork Products Company, Lancaster, Pa., or any branch office listed on the back cover of this catalog.

Prices—Since Armstrong's Linoleum, Linowall, and Resilient Tiles are sold through distributors, it is impossible for the Company to furnish information on the installed cost of any of its products, inasmuch as many factors beyond its control (local labor charges, areas of rooms, etc.) determine this. Armstrong distributors, however, will be glad to furnish architects and contractors with quotations on specific work.

FIVE SERVICES FOR ARCHITECTS

Armstrong's Architectural Service Bureau will furnish assistance in any problem pertaining to the use of Armstrong products for floors and walls.

Armstrong's Bureau of Interior Decoration, in charge of an experienced interior decorator, will suggest designs for floors and walls, with complete room color schemes and scaled miniatures of designs if desired. In requesting this service, please furnish room dimensions, color preferences, drawings, data on exposure, etc.

Samples of all products are available to architects. Whenever possible, please indicate the colors, grades, and gauges in which you are specifically interested.

Specifications in A. I. A. file size for any Armstrong floor or wall product are available upon request. See also pages 30-35 of this catalog.

Special Literature on Linoleum, Linowall, Linotile, Rubber Tile, Cork Tile, and Accotile is available upon request.

Note—It is suggested that architects contemplating the use of Armstrong products specify the colors or patterns by the numbers given in this or other Armstrong literature. Many of the colorings offered in the Armstrong Line are exclusive with Armstrong and cannot be duplicated in other materials. It is also suggested that selection be made from actual samples of the materials, rather than from color plates.

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223 Patterns · 5 Gauges · 9 Types

Dependability—Armstrong's Linoleum is recognized by architects generally as a "quality" product in its field. It is manufactured to specifications even more rigid than U. S. Government standards for weight, residual indentation, strength of keying to burlap, pliability, and resistance to water-absorption. In addition, it has demonstrated its long life, fast colors, and easy maintenance on installations of all kinds. In busy public buildings, floors of Armstrong's Linoleum are in good condition after fifteen to twenty years of service.

Three factors account for this superiority.

First, the use of the highest grade of raw materials: drying oils, powdered cork, gums, pigments, and burlap;

Second, the scrupulous attention given to every detail of manufacture by a skilled production department working to rigid manufacturing specifications;

Third, careful testing and inspection of the raw materials and product at every stage of manufacturing.

Colors and Patterns—Also important to architects are the design possibilities provided by the extensive assortment of colors and grainings in Armstrong's Plain, Jaspé, Raybelle, Monobelle, and Marbelle Linoleum. Used alone in allover effects, or combined in special custom-cut designs, there are colors for practically any interior scheme.

Equally versatile is Armstrong's Line of pattern goods, popular for residential use, which includes Embossed Inlaid, Straight Line, and Handmade Marble Inlaid.

Installation Methods—A valuable Armstrong service to architects is its constant laboratory and field study of linoleum installation methods, and its constant improvements in laying technique, adhesives, and lining felt. The installation method recommended in current specifications—namely, bonding the linoleum to lining felt on wood subfloors—is the only method having more than twenty years of successful performance behind it.

Armstrong's recent development of an improved lining felt expressly for flooring work is a noteworthy step toward improving linoleum installations. This felt is colored green for easy identification.

Gauges and Types—Armstrong's Linoleum is available in 6mm., $\frac{3}{16}$", Heavy, Medium, and Standard gauges. The gauges in which the various types are available are indicated on the pages describing each type.

Accessories—Coves and bases, pages 28-29. Linostrips and border strips, page 11.

Specifications—See page 30.

Striking design created with plain colors of Armstrong's Linoleum in dining-room of Hotel Ambassador, Washington, D.C., by Eugene Schoen & Sons. Armstrong's large assortment of plain colors makes the creation of special floor designs easy.

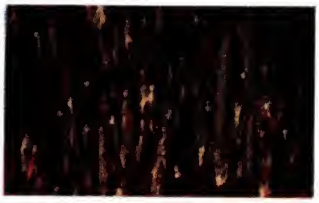
BATTLESHIP—PLAIN—JASPÉ—RAYBELLE

Battleship Linoleum is 6mm., 3/16″, or 1/8″ gauge linoleum in solid colors without pattern.

Plain Linoleum is the same quality as Battleship, but refers to the lighter and more decorative colors. It is supplied in 1/8″, Medium (3/32″), and Standard (5/64″) gauges.

Jaspé Linoleum presents a two-tone striated appearance. Jaspé is made in 3/16″, 1/8″, and Medium (3/32″) gauges.

When cut into strips and laid with 1/4″ interliners of No. 46 Chocolate Plain Linoleum, No. 16 and No. 17 Jaspé can be employed to create plank-floor effects. Pieces of No. 46 Chocolate are used to simulate the pegs or wedges.



No. 1004 Dusk Raybelle
1/8″, Medium, Standard

Raybelle is a new basic type of linoleum, exclusive with Armstrong, and is not an imitation of any other material. It can be used in allover effects, or it can be cut into designs. It combines well with plain colors.

Raybelle is available in Heavy (1/8″), Medium (3/32″), and Standard (5/64″) gauges.

In all these types of linoleum, the colors run through the full thickness to the burlap back. These materials are widely used for commercial and institutional floorings where traffic is severe, because they have a smooth, dirt-resistant surface. The markings of Jaspé and Raybelle tend to make tracked-in dust less noticeable.

Linosets—Special designs can be cut at the factory.

Linostrips—Machine-cut strips 5/8″, 1″, or 1 1/2″ wide and 45′ long in Battleship, Plain, and Raybelle. Also 1/4″ strips of No. 46 Chocolate, 45′ long, in 3/16″, Heavy, and Medium gauges. Also 36″-wide rolls of No. 16 or No. 17 Jaspé in 3/16″, Heavy, or Medium for plank floor effects.

Borders—Battleship, Plain, Raybelle, or Jaspé is offered in 90′ rolls 3″ to 36″ wide; and Plain No. 27 Black in 6″, 9″, or 12″ strips in 1/8″, Medium, or Standard gauge.

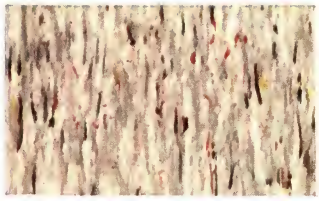
Cove Base—Pages 28-29.

Specifications—Page 30.

No. 1000 Sunset Raybelle
1/8″, Medium, Standard

No. 1006 Woodland Raybelle
1/8″, Medium, Standard

No. 1001 Midnight Raybelle
1/8″, Medium, Standard



No. 1002 Dawn Raybelle
1/8″, Medium, Standard

No. 15 Steel Gray Jaspé
3/16″, 1/8″, Medium

No. 13 Driftwood Gray Jaspé
3/16″, 1/8″, Medium

No. 8 Teak Brown Jaspé
1/8″, Medium

No. 19 Hunter Green Jaspé
3/16″, 1/8″, Medium

No. 011 Apple Green Jaspé
1/8″, Medium

No. 16 Malay Brown Jaspé
3/16″, 1/8″, Medium

No. 10 Rust Jaspé
1/8″, Medium

No. 12 Taupe Jaspé
3/16″, 1/8″ Medium

No. 17 Autumn Brown Jaspé
3/16″, 1/8″, Medium

No. 9 Tan Jaspé
1/8″, Medium

No. 14 Rose Taupe Jaspé
1/8″, Medium

No. 11 Marine Blue Jaspé
1/8″, Medium

New Plain Colors—Two recent developments in Armstrong's line of Plain Linoleum are important to the architect. First, the number of colors has been increased from seventeen to twenty-five, chiefly by the addition of bright colors for use as accents in night-club, powder-room, and other floors where intense colors may be desirable.

Second, the value or tone of existing colors has been altered slightly so as to produce a pleasing gradation of shades within a given hue, as will be seen below.

As a result, the architect has a greater number of colors to work with and will find it easier to harmonize floors with other interior furnishings. Also, in this integrated line of colors, the number of colors that will look well together is greater, thereby reducing the time required for planning floor designs where many hues are used.

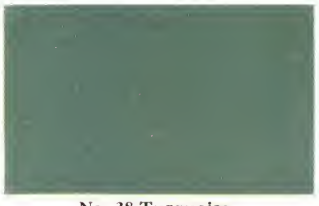
In addition to the colors shown on this page, one other—Armstrong's No. 27 Plain Black Linoleum in 3/16", Heavy, Medium, and Standard gauges—is available.

No. 23 White
1/8", Medium, Standard

No. 24 Pearl Gray
1/8", Medium, Standard

No. 26 Silver Gray
1/8", Medium, Standard

No. 22 Dark Gray
3/16", 1/8", Medium, Standard



No. 38 Turquoise
1/8", Medium, Standard

No. 43 Oriental Blue
1/8", Medium, Standard

No. 29 Cadet Blue
1/8", Medium, Standard

No. 30 Midnight Blue
1/8", Medium, Standard

No. 45 Fawn
1/8", Medium, Standard

No. 28 Tan
1/8", Medium, Standard

No. 20 Brown
6 mm., 3/16", 1/8", Medium, Standard

No. 46 Chocolate
3/16", 1/8", Medium, Standard

No. 44 Willow Green
1/8", Medium, Standard

No. 42 Jade
1/8", Medium, Standard

No. 21 Evergreen
3/16", 1/8", Medium, Standard

No. 48 Canary Yellow
1/8", Medium, Standard

No. 41 Orange
1/8", Medium, Standard

No. 39 Chinese Red
1/8", Medium, Standard

No. 40 Ruby
1/8", Medium, Standard

No. 47 Eggplant
1/8", Medium, Standard

No. 49 Coral
1/8", Medium, Standard

No. 25 Terra Cotta
3/16", 1/8", Medium, Standard

No. 33 Chartreuse
1/8", Medium, Standard

No. 37 Deep Rose
1/8", Medium, Standard

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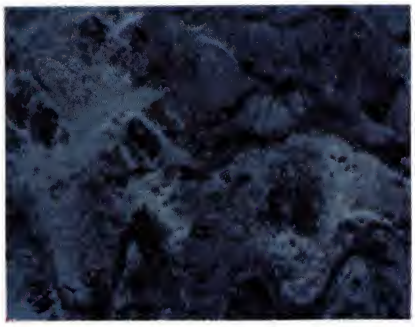
Marbelle is linoleum in an allover marble effect, without pattern. It is useful for floorings exposed to considerable traffic because the allover coloring does not show surface dirt readily. The colors run through to the burlap back. It is often used with a border of Plain Linoleum or as a border material for other types of linoleum. Where a suggestion of pattern is desired, Marbelle can be laid in blocks and laid with the grainings at right angles.

Gauges—3/16″, Heavy (1/8″), Medium (3/32″), and Standard (5/64″).

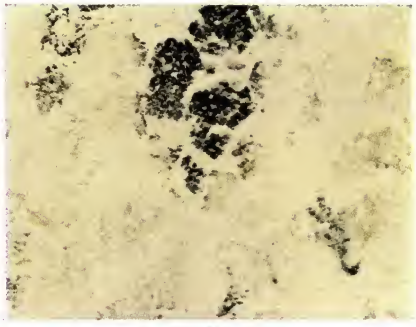
Border Strips—Marbelle strips can be furnished in rolls of any width from 3″ to 36″ and 90′ long. No. 02 and No. 021 Black Marbelle are available in 6″, 9″, or 12″ wide border strips in 1/8″, Medium, and Standard gauges.

Linostrips—Any pattern in strips 5/8″, 1″, or 1 1/2″ wide, in 45′ rolls.

No. 028 Marbelle
1/8″, Medium, Standard



No. 025 Marbelle
1/8″, Medium, Standard



No. 032 Marbelle
1/8″, Medium, Standard

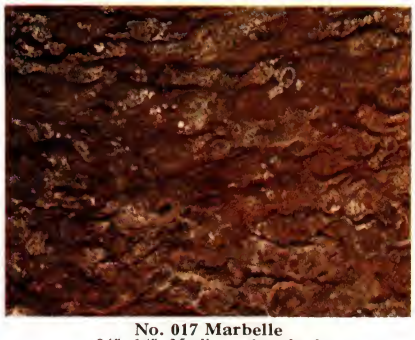
No. 05 Marbelle
3/16″, 1/8″, Medium, Standard

No. 09 Marbelle
1/8″, Medium, Standard

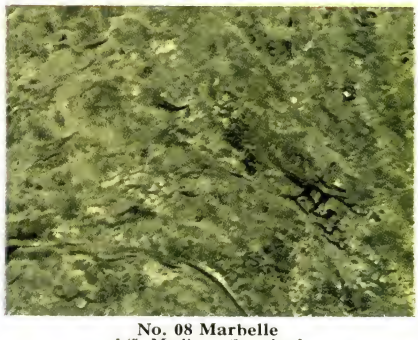
No. 030 Marbelle
1/8″, Medium, Standard

No. 026 Marbelle
1/8″, Medium, Standard

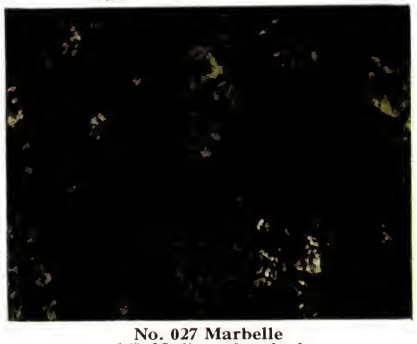
No. 01 Marbelle
3/16″, 1/8″, Medium, Standard



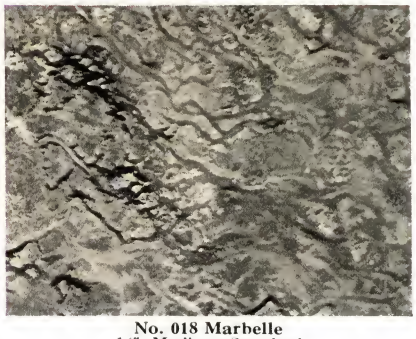
No. 017 Marbelle
3/16″, 1/8″, Medium, Standard



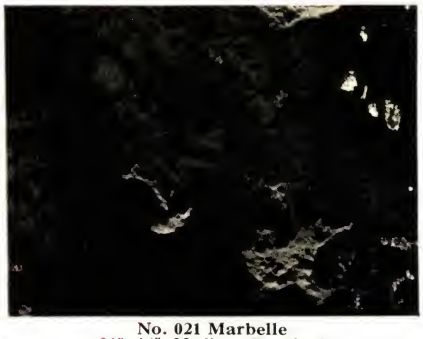
No. 08 Marbelle
1/8″, Medium, Standard



No. 027 Marbelle
1/8″, Medium, Standard

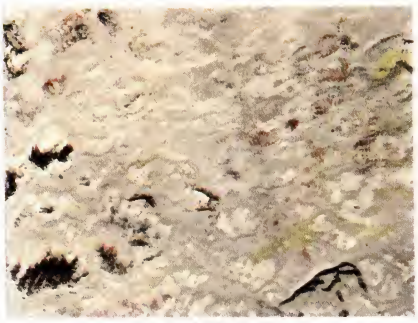


No. 018 Marbelle
1/8″, Medium, Standard

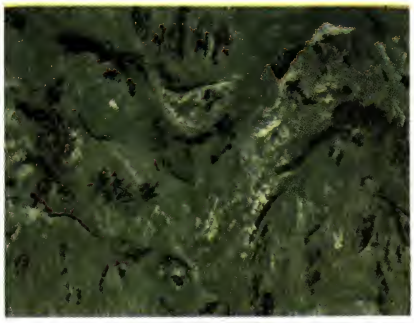


No. 021 Marbelle
3/16″, 1/8″, Medium, Standard

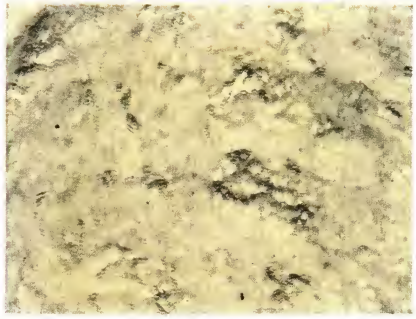
ARMSTRONG'S MARBELLE LINOLEUM



No. 024 Marbelle
⅛", Medium, Standard



No. 06 Marbelle
⅛", Medium, Standard



No. 03 Marbelle
⅛", Medium, Standard

In this modern market, Plain and Marbelle Linoleum are combined to produce a colorful but thoroughly practical floor. The Marbelle No. 03 is accented with Linostrips of jade green. Tops of tables and counters also are Marbelle Linoleum.

ARMSTRONG'S MONOBELLE LINOLEUM

Monobelle is a new type of linoleum developed by Armstrong. It differs from Marbelle in that the all-over marble effect is produced by tones of a single color, rather than by the combination of colors.

Gauges—Heavy (⅛"), Medium (3/32"), Standard (5/64").

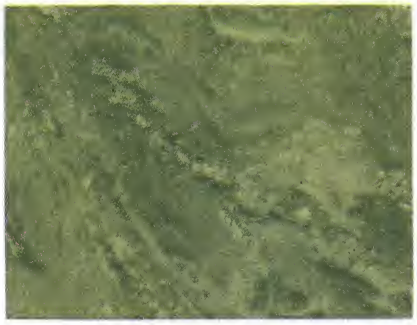
Border Strips—in rolls from 3" to 36" wide and in any length up to 90'.

Linostrips—in strips ⅝", 1", or 1½" wide in 45' rolls.

No. 044 Monobelle
⅛", Medium, Standard

No. 042 Monobelle
⅛", Medium, Standard

No. 041 Monobelle
⅛", Medium, Standard



No. 040 Monobelle
⅛", Medium, Standard

No. 043 Monobelle
⅛", Medium, Standard

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Embossed Inlaid—In Embossed Inlaid Linoleum, portions of the design are slightly depressed, producing a flooring in which the tiles or other elements stand out in relief, but in which the hardness and coldness of hard tile are replaced by the comfort and resilience of linoleum.

"STREAMLINE" AND "THREE-LEVEL" EMBOSSING

"Streamline" embossing makes cleaning easy by preventing dirt from collecting in the depressed sections. It also tends to conceal irregularities in the subfloor and to break up highlights that cause a glassy appearance.

Another Armstrong design effect is "three-level" embossing, which makes the raised portions appear to be at different levels. This makes the design more interesting and further prevents glare.

In many of the Embossed Inlaid patterns, the tiles are shaded. This shading not only adds to attractiveness but also tends to conceal tracked-in dirt and dust.

Providing a floor effect not otherwise obtainable in resilient materials, Embossed Inlaid Linoleum has found wide application in residences. It has also been popular in restaurants, tea rooms, shoe stores, and high-class specialty shops of all kinds; as well as in the offices of physicians, dentists, and other professional workers.

Limited space makes it impossible to show typical applications of this material in living-rooms, dining-rooms, and bedrooms, but color plates of such rooms are available upon request. Other suggestions will be found in Armstrong advertisements, which appear frequently in the leading national magazines.

The designs shown here are only a few of the scores available. The complete line is illustrated in Armstrong's Pattern Book, available to architects upon request.

Gauges—Heavy (1/8″), Medium (3/32″), and Standard (5/64″), in rolls 72″ wide.

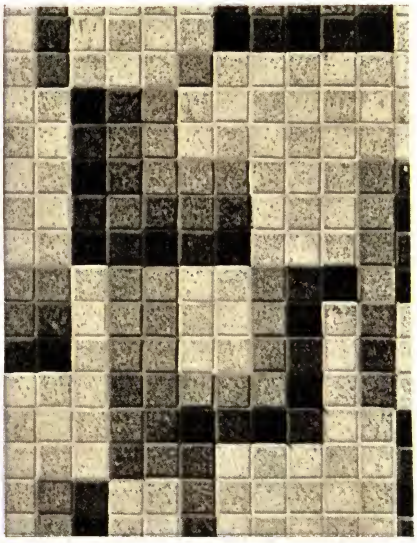
Borders—Embossed Inlaid is usually bordered with Armstrong's Plain, Monobelle, or Marbelle Linoleum.

Cove and Base—See pages 28 and 29.

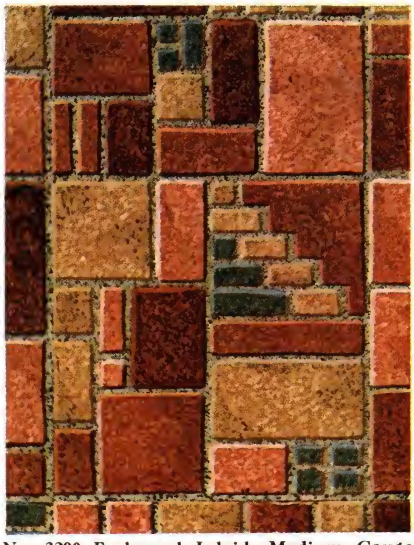
Specifications—See flooring specifications, page 30.

Armstrong's Embossed Inlaid Linoleum No. 6280 in rich tones of tan and brown provides a colorful, easy-to-clean floor in this comfortable study.

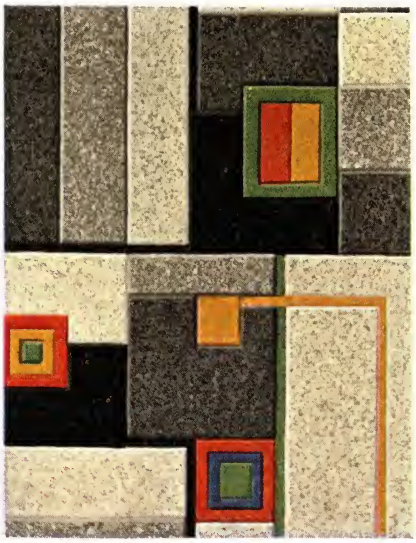
No. 6320 Embossed Inlaid—Heavy (⅛") Gauge
(Plate shows approx. 1/5 scale) 2 yards wide only



No. 5441 Embossed Inlaid—Standard Gauge
(Plate shows approx. 1/5 scale) 2 yards wide only



No. 3290 Embossed Inlaid—Medium Gauge
(Plate shows approx. 1/5 scale) 2 yards wide only



No. 5531 Embossed Inlaid—Standard Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

No. 6310 Embossed Inlaid—Heavy (⅛") Gauge
(Plate shows approx. 1/5 scale) 2 yards wide only

No. 3381 Embossed Inlaid—Medium Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

No. 5352 Embossed Inlaid—Standard Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

No. 3281 Embossed Inlaid—Medium Gauge
(Plate shows approx. 1/5 scale) 2 yards wide only

No. 6291 Embossed Inlaid—Heavy (⅛") Gauge
(Plate shows approx. 1/5 scale) 2 yards wide only

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No. 246 Straight Line Inlaid—Heavy (⅛″) Gauge
(Size of Blocks—6″ x 6″) 2 yards wide only

Straight Line Inlaid Linoleum consists of plain or marbleized units of design keyed to a burlap backing by tremendous pressure. The name of this material arises from the fact that the lines between the blocks of the pattern, which are die-cut, are sharp and distinct, in contrast to the slightly irregular lines separating the blocks of the pattern in Armstrong's Embossed Inlaid Linoleum.

Straight Line Inlaid, is a completely machine-made product and therefore is lower in cost than Handmade Marble Inlaid, in which the units of design are arranged by hand.

In Straight Line Inlaid, which offers a combination of beauty and durability, the colors run through the full thickness of the material. Dozens of attractive patterns in an assortment of large-scale and small-scale designs are available for kitchens, bathrooms, offices, restaurants, institutions, and stores. A few are shown here.

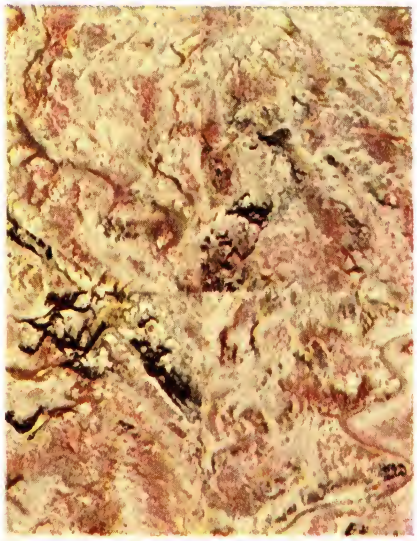
Gauges—Straight Line Inlaid is supplied in Heavy (⅛″), Medium (3/32″), and Standard (5/64″) gauges.

Borders—Harmonizing or contrasting colors of Plain, Jaspé, Raybelle, Monobelle, and Marbelle Linoleum are often used as borders for floors of Straight Line Inlaid. See pages 4, 5, 6, and 11.

Cove and Base Treatments—See pages 28 and 29.

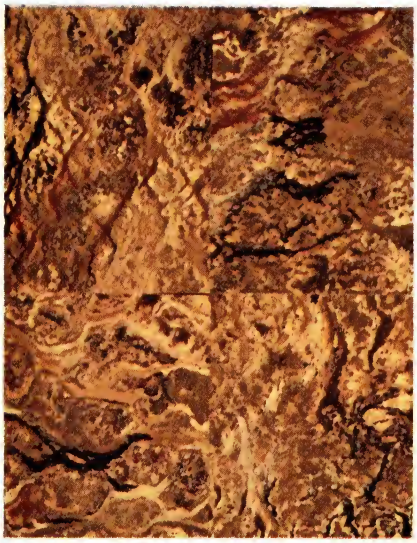
Specifications—See page 30.

No. 0356 Straight Line Inlaid—Standard Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

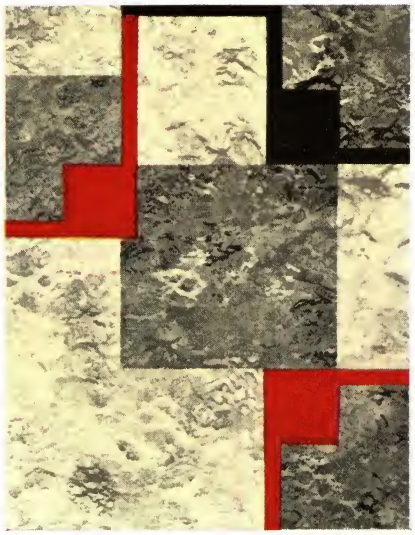


No. 0382 Straight Line Inlaid—Standard Gauge
(Size of Blocks—9″ x 9″) 2 yards wide only

No. 661 Straight Line Inlaid—Heavy (⅛″) Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only



No. 595 Straight Line Inlaid—Heavy (⅛″) Gauge
(Size of Blocks 9″ x 9″) 2 yards wide only



No. 14252 Straight Line Inlaid—Medium Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

No. 14272 Straight Line Inlaid—Medium Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

Special Designs—Almost any design that can be drawn can be executed as a special inset in Linoleum, Linotile, Rubber Tile, Cork Tile, Accotile, or Linowall. These Linosets can be cut from any color of linoleum or resilient tile and cemented into field or borders. The cutting can be done by the flooring contractor, or the design can be cut to order at the Armstrong factory. Those shown here are suggestions and not stock designs. In creating such designs, it is well to make sure that all colors required for the Linoset are available in the gauge selected.

Linostrips—Linostrips are narrow strips of linoleum or other resilient material. They are often laid between the border and the field as an accent; or they can be set several inches from the wall, so that the field material can serve as a border. Two or more Linostrips can be used for multiple borders, or as interliners.

Linoleum or Linowall Strips—Any color or gauge of Battleship, Plain, Raybelle, Monobelle or Marbelle Linoleum (as well as Linowall Nos. 700 to 706, and 731 to 738) can be supplied in strips $\frac{5}{8}$", 1", or $1\frac{1}{2}$", wide, in 45′ rolls. Also $\frac{1}{4}$" strips of No. 46 Chocolate, 45′ long, in $\frac{3}{16}$" Medium, or Heavy gauges. Also 36"-wide rolls of No. 16 or No. 17 Jaspé in $\frac{3}{16}$", Heavy, or Medium gauges.

Accotile Strips can be supplied in 1" x 24" and 2" x 24", in $\frac{1}{8}$" or $\frac{3}{16}$" gauge, for installation as interliners.

Linotile Strips can be supplied $\frac{1}{4}$", $\frac{3}{8}$", $\frac{1}{2}$", $\frac{3}{4}$", and 1" wide, for installation as interliners.

Rubber Tile Strips can be supplied in any width from $\frac{1}{4}$" to 3", in 36" lengths.

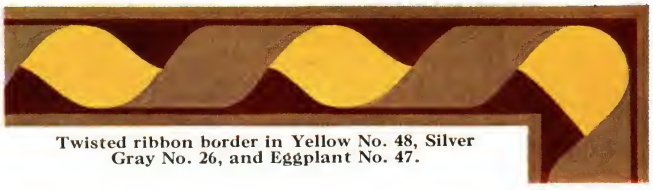
Linoleum Borders—Battleship, Plain, Jaspé, Raybelle, Monobelle, Marbelle, and allover patterns of Marble Inlaid Linoleum can be furnished in 90′ rolls 3" to 36" wide. Also ready-cut borders 6", 9", or 12" wide in No. 27 Plain Black, and in No. 02 or No. 021 Marbelle in $\frac{1}{8}$", Medium, and Standard gauges.

Cork Tile Border Strips can be supplied in any width under 3", and 18" to 36" long.

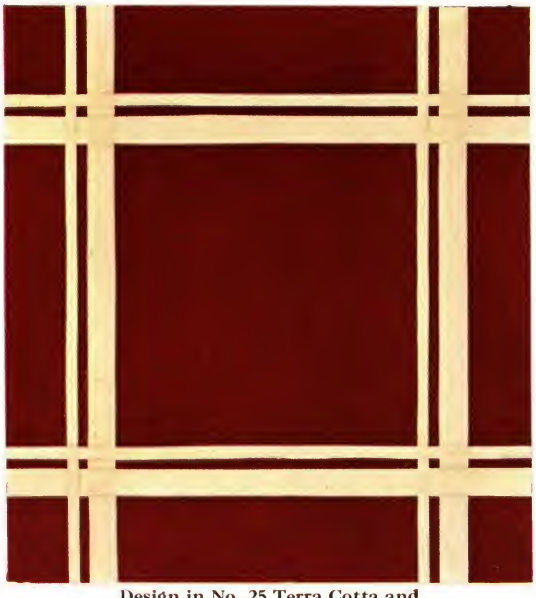
Linotile Borders can be supplied in any width from 1" to 4", in any length between 18" and 36".

Special border effects in several colors, such as those shown below, can be cut on the job or produced to order at the Armstrong factory. Because all colors are cut simultaneously, it is often possible to economize by planning to use the reverses of the design for other areas.

Laurel-leaf border executed in Jade No. 42 and White No. 23 Plain Linoleum.



Twisted ribbon border in Yellow No. 48, Silver Gray No. 26, and Eggplant No. 47.

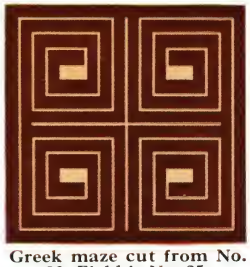


Design in No. 25 Terra Cotta and No. 23 White Plain Linoleum.

Border is Evergreen No. 21 and Jade No. 42 Plain. Field is No. 18 Royal Blue Jaspé.

Sagittarius, No. 27. Symbols, No. 40—Field, No. 018.

Nos. 21, 28, 41, 42, and 48 in still life effect.

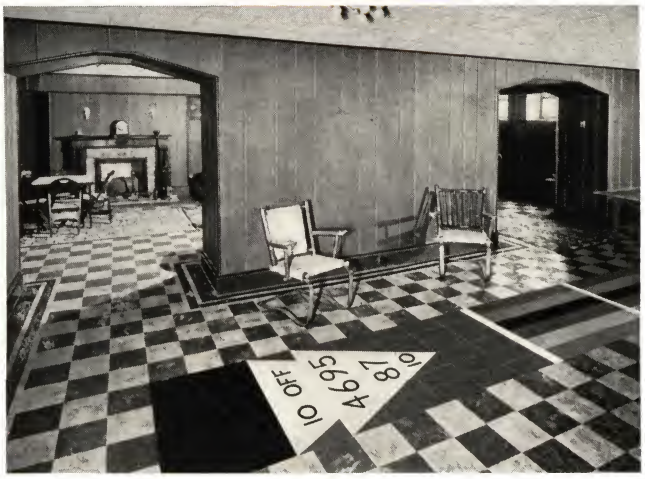


Greek maze cut from No. 23. Field is No. 25.

Design cut from Nos. 22, 23, 26. Field is No. 27.

LINOLEUM · RUBBER TILE · LINOTILE

LEFT—*Carved linoleum murals in the Fashion Academy of the Radio City School of Design, New York. Any cabinet-maker skilled in wood carving can create effective designs in linoleum. Entire designs can be carved from a single color of linoleum, or a variety of colors and grainings can be used effectively. A modification of this idea is to use plaques of carved linoleum on walls covered with Armstrong's Linowall.*



ABOVE—*In this interesting basement recreation room, plain colors of Accotile were used to create the game board, which is set into a field of marble Accotile. Walls and ceiling are Armstrong's Temlok De Luxe.*

ABOVE—*Reinforced rubber tile lends itself to the creation of interesting designs in this office. It is an excellent flooring for private offices because it is rich in appearance, quiet, and restful. Armstrong-Stedman Reinforced Rubber Tile is thoroughly practical for busy commercial areas.*

RIGHT—*Peck and Peck store, Cleveland, with a quiet, restful floor of Armstrong's Beveled Cork Tile. The field in light and medium shades of cork tile has a border in dark cork tile. Where traffic is not excessive, and where the cork tile is properly maintained, it is an excellent floor for smart shops, offices, bank cages, museums, and libraries.*

CORK TILE · ACCOTILE · LINOWALL

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ABOVE—*Linotile in the soda fountain and tea room of the S. S. Kresge Company store, Grand Rapids. Linotile is the best type of resilient flooring for heavy-traffic areas.*

ABOVE—*Linoleum is used to create this interesting trademark. Linosets like this can be cut to order at the Armstrong factory. Note the directional lines pointing to the entrance.*

RIGHT—*No. 750 Yellow Linowall provides an attractive wall covering in this modern kitchen. Note the drainboards with No. 29 Blue Linoleum flashed up the wall.*

BELOW—*Intricate designs in Armstrong-Stedman Reinforced Rubber Tile at Kosair Children's Hospital, Louisville. Armstrong's exclusive reinforcing process makes this rubber tile extremely durable.*

BELOW—*Children learn the alphabet and points of the compass on this floor created with plain colors of Armstrong's Linoleum in Holland Patent School, Holland Patent, New York.*

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Description—Linotile, an exclusive Armstrong product, is a linoleum-type composition tile that is even more resistant to indentation than Battleship Linoleum. Dense but resilient, it consists of oxidized oil, powdered cork, and color pigments specially processed to give maximum service when used in tile form. Linotile should not be confused with linoleum cut into tiles.

Advantages—Linotile has all the beauty and other advantages of hard tile without the attendant disadvantages of coldness, hardness, and noisiness. The cork content and the oxidized oil give Linotile a springiness that makes it comfortable and practically noiseless under impact. It is remarkably durable, easy to clean, non-slippery if properly maintained, and simple to repair if damaged by some unusual accident.

Linotile will not splinter, crumble, or dust. The tiles are laid by hand, and almost any design that can be created can be faithfully executed in the flooring.

Colors—Linotile is available in 14 plain and 16 marble colors. In each tile, the color runs through the full thickness. In the marble effects, the non-directional swirl graining—an exclusive Armstrong feature—hides footmarks and wear. The rich, delicate variegations in the marble colors give Linotile outstanding beauty.

SIZES

Squares

2″, 3″, 4″, 6″, 8″, 9″, 12″, 18″, 24″, and 36″

Oblongs

3″ x 6″	9″ x 18″
3″ x 12″	18″ x 36″
4″ x 16″	24″ x 36″
6″ x 12″	30″ x 36″
6″ x 18″	

Where to Use Linotile—Because Linotile combines great durability with attractive coloring, it is an ideal flooring for commercial properties, hospitals, schools, and fine residences. For hospital use, it is particularly suitable because it is almost as impervious to X-rays as lead; and it is quiet and restful underfoot.

Linotile should not be used over concrete in direct contact with the ground, and it is not recommended for use in high-humidity climates such as are encountered in the proximity of the Gulf of Mexico. (Rubber Tile or Accotile is recommended for humid climates.)

Gauges—1/8″ and 3/16″. Nos. 10, 41, 80, 91, 102, 105, 112, 130, 145, 146, 155, and 165 are not available in 1/8″ gauge.

Border Strips—1″ to 4″ wide, and 18″ to 36″ long.

Interlining Strips—Strips 1/4″, 3/8″, 1/2″, 3/4″, and 1″ wide are available.

Diagonal Half Tiles—Cut diagonally from any regular square tile.

Linotile Beveled Edging, for finishing edges (as at doorways) of resilient floor materials, is available 1″ wide and 36″ long, 1/8″ or 3/16″ thick at one edge and tapering to approximately 1/32″ at the other edge. All plain and marble colors. See page 29 for drawings and installation details.

Cove and Base—See pages 28–29.

Specifications—See page 30.

Sky No. 41
3/16″ only

Orange No. 80
3/16″ only

Light Green No. 70
1/8″, 3/16″

Light Brown No. 62
1/8″, 3/16″

Ivory No. 20
1/8″, 3/16″

Dark Brown No. 64
1/8″, 3/16″

Yellow No. 91
3/16″ only

Red No. 10
3/16″ only

Medium Green No. 73
1/8″, 3/16″

Dark Gray No. 54
1/8″, 3/16″

Dark Green No. 75
1/8″, 3/16″

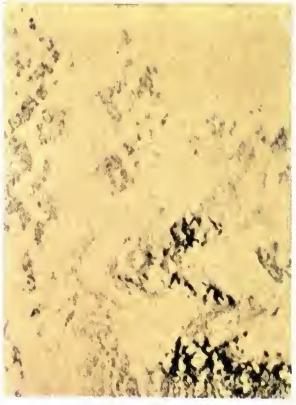
Chocolate No. 65
1/8″, 3/16″

Black No. 30
1/8″, 3/16″

Light Gray No. 52
1/8″, 3/16″

Ford Rotunda, Dearborn, Michigan, uses Linotile floors in special shades of Ford blue. Albert Kahn, Inc. specified 38,000 sq. ft. of Linotile flooring for this building.

Oyster No. 112
3/16" only

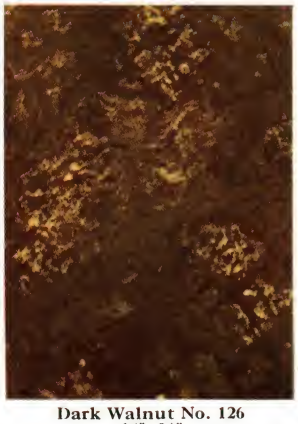


Matrix No. 110
1/8", 3/16"

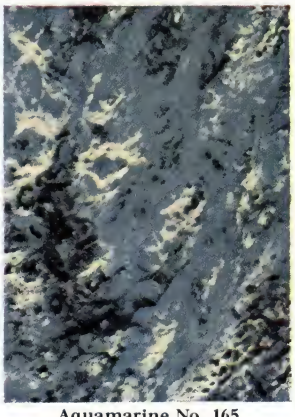
Travertine No. 115
1/8", 3/16"

Light Walnut No. 125
1/8", 3/16"

Sienna No. 150
1/8", 3/16"



Dark Walnut No. 126
1/8", 3/16"



Aquamarine No. 165
3/16" only

Light Slate No. 145
3/16" only

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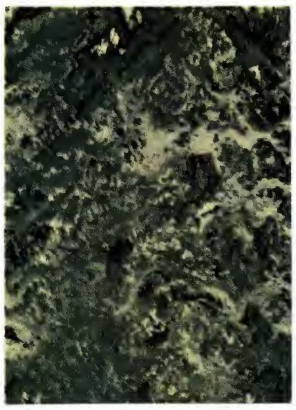
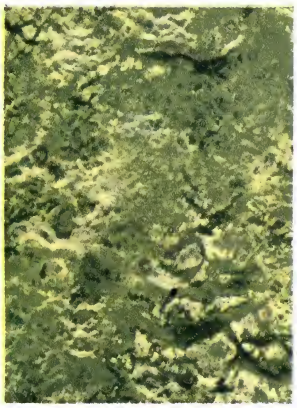


Surf Green No. 130
3/16" only

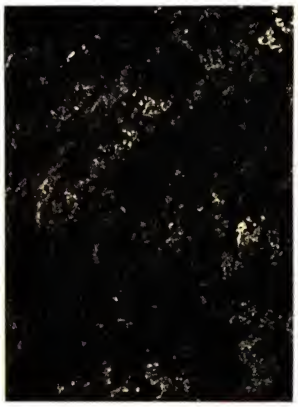
Dark Slate No. 146
3/16" only

Algerian Black No. 105
3/16" only

Ocean Green No. 131
1/8", 3/16"



Foam Green No. 129
1/8", 3/16"



Tourmaline No. 100
1/8", 3/16"

Algerian Red No. 155
3/16" only

Agate No. 102
3/16" only

Armstrong's Linotile Design No. 560
Consists of: Aquamarine No. 165, Oyster No. 112, and Tourmaline No. 100.

Armstrong's Linotile Design No. 570
Consists of: Algerian Black No. 105, Dark Slate No. 146, Light Slate No. 145, and Algerian Red No. 155.

Description—Armstrong's Cork Tile is made from high-grade pure cork shavings compressed and baked in molds. The natural gums in the cork bind the particles together, producing a closely knit, long-wearing tile with great resistance to abrasion and shock. Cork Tile will not "dust" or crumble. It is not slippery even when laid on inclines. It is quiet under footsteps or impact. It is resilient and comfortable underfoot. It is durable and, if kept properly finished, can be used in areas exposed to considerable traffic.

Beveled and Standard (unbeveled) Tiles can be supplied. With unbeveled Cork Tile, sanding the finished floor is usually necessary to offset unevenness of the subfloor. Beveled Cork Tile conceals irregularities and eliminates sanding. It is also used on walls, where sanding would be difficult.

Finish—After installation, Cork Tile should be given one brush coat of Armstrong's Cork Tile Sealer followed by one coat of Armstrong's Cork Tile Undercoat, and one coat of Linogloss Wax, unless it is beveled tile that has been ordered finished at the factory. The undercoat should be thoroughly buffed with a floor machine before waxing. For subsequent maintenance, use Linogloss.

Gauges—$\frac{5}{16}$″ and $\frac{1}{2}$″.

Border Strips—Up to 3″ wide, and 18″ to 36″ long.

Beveled Border Tiles—Supplied with bevel on one edge.

Diagonal Half Tiles—Cut diagonally from any regular square tile.

Cove and Base—Cork Tile Cove and 4″ or 6″ high Cork Tile Base in $\frac{1}{2}$″ or $\frac{5}{16}$″ gauge. Special heights to order. See pages 28–29.

Specifications—*Floor*, page 30. *Walls* and *Wainscoting*, page 34.

Note: Not recommended where dirt, foods, greases, or other unsanitary materials may be spilled, or for excessive gritty abrasive traffic. Spread point loads with Bassick Furniture Rests or suitable bases.

SIZES

Squares:
2″, 3″, 4″, 6″, 9″, 12″

Oblongs:

2″x 6″	4″x12″	9″x18″
2″x 9″	6″x 9″	9″x36″
3″x 9″	6″x12″	12″x18″
3″x12″	6″x18″	12″x24″
3″x36″	6″x36″	12″x36″

Armstrong's Cork Tile—Light

Armstrong's Cork Tile—Medium

Armstrong's Cork Tile—Dark

Armstrong's Cork Tile Design No. 710
Consists of: Medium Shade and Dark Shade Cork Tile.

Armstrong's Cork Tile Design No. 760
Consists of: Light Shade, Medium Shade and Dark Shade Beveled Cork Tile.

Armstrong's Cork Tile Design No. 740
Consists of: Light Shade, Medium Shade, and Dark Shade Cork Tile.

ARMSTRONG-STEDMAN REINFORCED RUBBER TILE

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Description—Armstrong-Stedman Reinforced Rubber Tile is manufactured with an invisible, interwoven fibre reinforcement that makes the tile more dense and more highly resistant to deterioration and abrasive effects of traffic. The reinforcement also adds to the tensile strength and prevents buckling or crazing due to seasonal contraction or expansion of the underfloor.

In addition, the reinforcing insures deeper graining and richer coloring because it prevents the pigments from flowing during manufacture. The fibres do not reduce the amount of rubber in each tile, but merely replace inert fillers, which are used in all rubber tiles.

Although this reinforcement is exclusive with Armstrong, it adds nothing to the cost of the material.

Colors—Forty marble, paisley, and two-tone colors are available. In each tile, the coloring runs through the full thickness. Armstrong-Stedman Reinforced Rubber Tile is distinguished by its two-tone colors, an exclusive Armstrong feature developed to provide the decorative effect of solid colors at lower cost than with solid colors, which are more expensive to manufacture. Two-tone colorings tend to hide traffic marks.

Ease of Cleaning—Rubber Tile is a practical flooring because ink and other common liquids wipe up without stain, and burns from cigarettes and matches can be removed with exceptional ease. Washing should be done in accordance with the approved recommendations of the Rubber Manufacturers' Association, New York City. Rubber Tile should be maintained with Armstrong's Linogloss Wax.

Accessories—The usefulness of Armstrong-Stedman Rubber Tile is increased by a complete assortment of accessories, including a special hospital type cove and base designed for maximum sanitation and easy maintenance. See pages 28 and 29.

Gauges—$\frac{1}{8}$", $\frac{3}{16}$", $\frac{1}{4}$" (all colors).

Diagonal Half Tiles of sizes below are available.

Feature Strips (maximum length 36", $\frac{1}{4}$" to 3" wide) can be supplied with square or rounded edges.

Specials—Any square or rectangular piece of $\frac{3}{16}$" or $\frac{1}{4}$" material larger than 36" x 36" can be supplied in sizes up to 36" x 15'10". Maximum size of $\frac{1}{8}$" material is 36" x 36". Also irregular shapes and tiles with cut corners.

Cove Base and Accessories—Rubber Tile can be used with Armstrong's Metal Back or Flash Type Cove and Base; Armstrong's Accotile Base; or Armstrong's Rubber Cove Base (sanitary, hospital, or utility type). Cove base, corners, end pieces, plinth blocks, stair treads, risers, thresholds, and other accessories are available. See pages 28–29.

Specifications. See page 30.

SIZES

Squares:
3", 4", 6", 9", 12", 36"

Oblongs:
3" x 6" 6" x 12"
9" x 18"

Armstrong-Stedman Reinforced Rubber Tile in No. 650 Verde Antique, No. 678 Sea Green White, No. 645 Light Jade, and No. 643 White Sea Green used as a dining-room floor. Walls are Armstrong's Temlok De Luxe.

11
70

Two-Tone Blue No. 608

Two-Tone Gray No. 606

Two-Tone Orange No. 607

Two-Tone Green No. 603

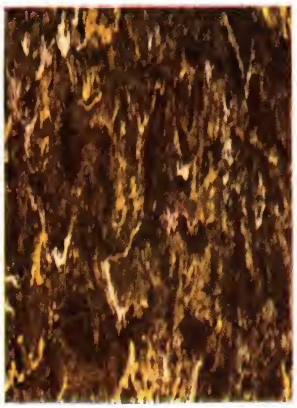
Two-Tone Orchid No. 605

Two-Tone Tan No. 602

Antique Red No. 685

Sea Green White No. 678

Escalette No. 620


Walnut Paisley No. 690

Slate Red Paisley No. 683

White Sea Green No. 643

Ivory Antique, No. 618

Napoleon Gray No. 625

Travertine No. 628

Mother-of-Pearl No. 623

ARMSTRONG-STEDMAN REINFORCED RUBBER TILE

11/70

White-Black No. 653

Silvertone Gray No. 655

Platinum Gray No. 658

Pink Tennessee No. 680

Light Gold No. 660

Indian Red Paisley No. 670

Brown Gold Paisley No. 663

Oyster No. 615

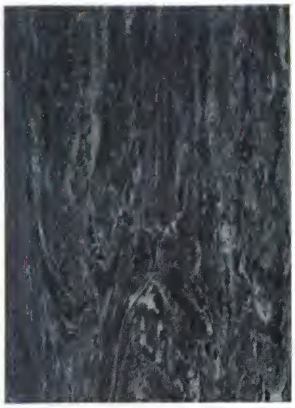
Light Jade No. 645

Ivory No. 610

Light Mahogany No. 635

Green Paisley No. 648

Dark Mahogany No. 638


Turquoise No. 693

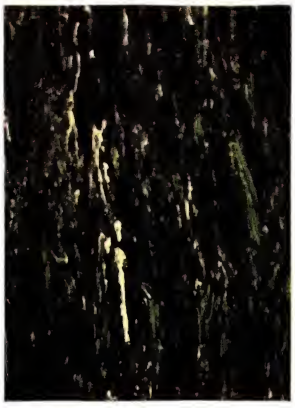
Light Oak No. 630

Dark Oak No. 633

Black-White No. 613

Red Gold Paisley No. 688

Black Gold Paisley No. 640

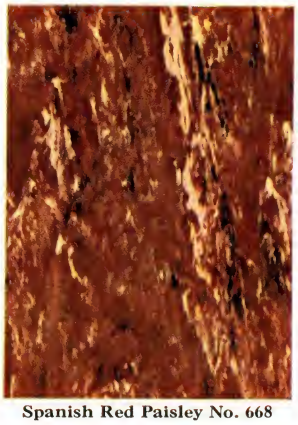


Verde Antique No. 650

Two-Tone Brown No. 601

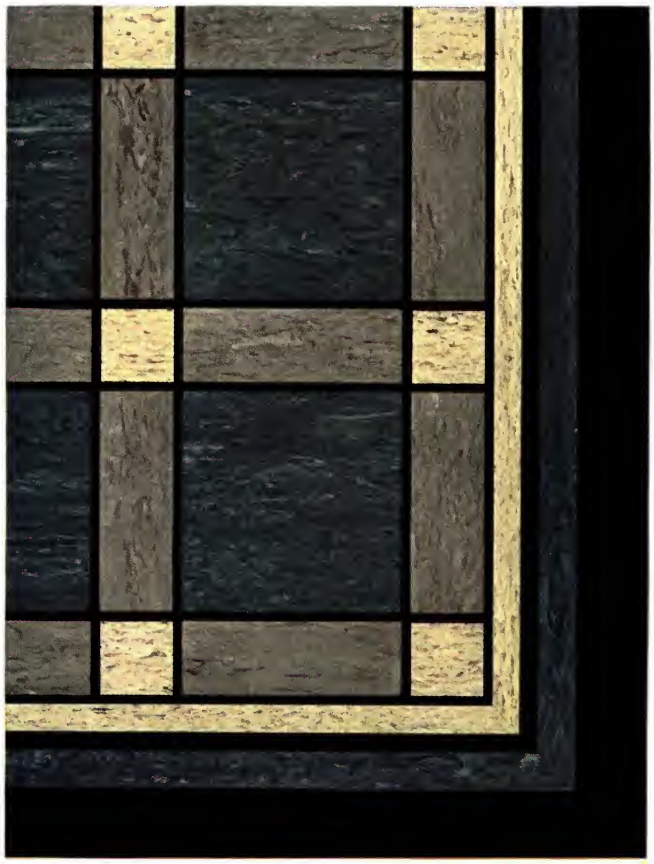
Plain Black No. 695

Black Red No. 673



Spanish Red Paisley No. 668

Armstrong-Stedman Rubber Tile Design No. R65
Consists of: Oyster No. 615, Light Jade No. 645, Green Paisley No. 648, and Verde Antique No. 650.



Armstrong-Stedman Rubber Tile Design No. R55
Consists of: Platinum Gray No. 658, Turquoise No. 693, Mother-of-Pearl No. 623, and Plain Black No. 695.

11/70

Description—Accotile is an asphaltic tile, which is the only type of resilient flooring that should be used on concrete subfloors in direct contact with the ground, on or below grade. (Accotile shall not be installed on subfloors that are subject to hydrostatic pressure.)

Accotile is made of high quality, inert raw materials—asbestos fibre, mineral pigments, and asphaltic or resinous binder. It is fire-resistant, odorless, resistant to mild alkaline or acid substances, and good as an electrical insulator. Even under heavy traffic and severe conditions, Accotile resists abrasion, indentation, and shock. It does not disintegrate or crumble. However, it should not be used where it will be exposed to greases, organic solvents, strong acids, or strong alkalis.

Colors—Accotile is available in 18 plain and 16 marble colors. In the marbles, the non-directional swirl graining—an exclusive Armstrong feature—hides wear and traffic marks. The colors run through the full thickness of the material.

Low Cost—Accotile is the lowest-cost material in Armstrong's Line of resilient tiles. Its economy and its moisture-resistance make it an ideal flooring for basement recreation rooms or for commercial buildings.

SIZES

Squares:
3″, 6″, 9″, 12″

Oblongs:

3″ x 6″	9″ x 18″
6″ x 12″	12″ x 24″
6″ x 24″	18″ x 24″

Gauges—All colors and sizes in $\frac{1}{8}$″, $\frac{3}{16}$″, and $\frac{1}{4}$″. Special $\frac{3}{8}$″ gauge to order.

Feature Strips—1″ x 24″ and 2″ x 24″ in $\frac{1}{8}$″ or $\frac{3}{16}$″ gauge, any color.

Diagonal Half Tiles—Cut from 6″, 9″, or 12″ squares, all gauges and colors.

Base—6″ x 24″ Accotile is recommended for base treatments. See page 29.

Specifications—See pages 30 and 32.

Scotch Gray No. 260

Buff No. 248

Willow Green No. 250

Azure Blue No. 235

Regal Blue No. 231

Rose No. 203

Spanish Red No. 205

Pompeian Red No. 200

Mahogany No. 220

Light Green No. 257

Dark Green No. 251

Saddle Tan No. 247

Malay Brown No. 241

White No. 270

Steel Gray No. 266

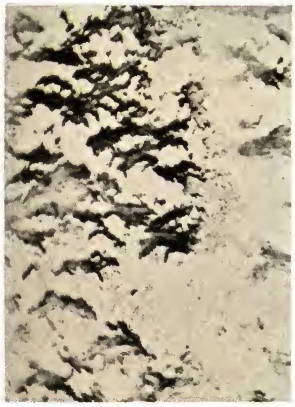
Lead Gray No. 261

Black No. 210

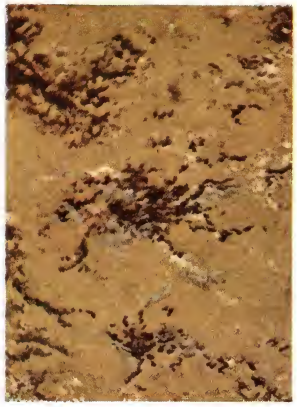
11/70

In structures built without basements where concrete slab is in direct contact with the ground, asphaltic tile is the only type of resilient flooring recommended. Hence, the use of Accotile in this entrance. Walls are Armstrong's Temlok De Luxe.

Jade Green Marble No. 310

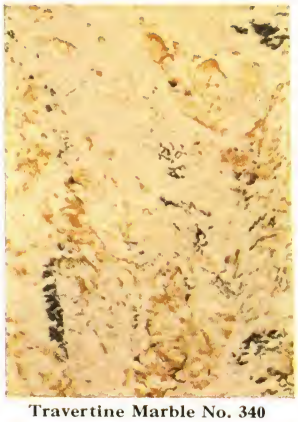


Ivory Marble No. 300

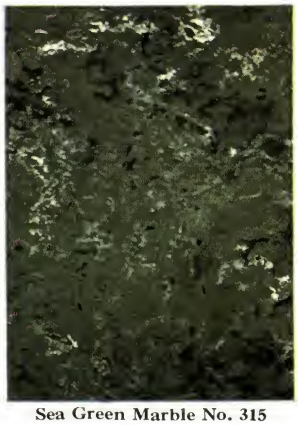


Tan Marble No. 325

Clay Brown Marble No. 330

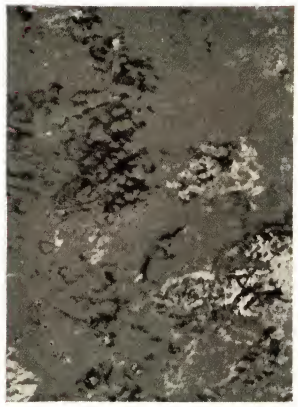


Travertine Marble No. 340



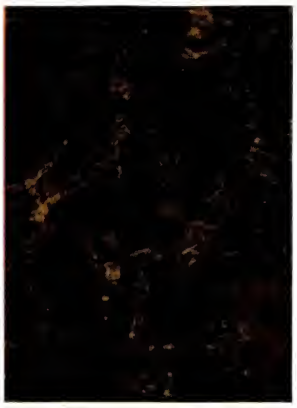
Sea Green Marble No. 315

Antique Green Marble No. 335



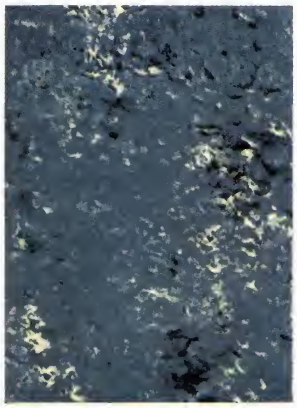
Slate Gray Marble No. 345

11/70



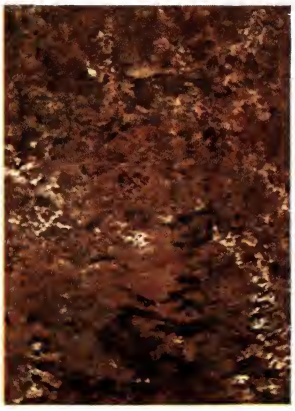
Black Gold Marble No. 360

Tennessee Marble No. 342

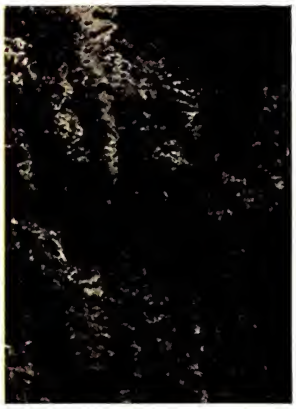


Delft Marble No. 355

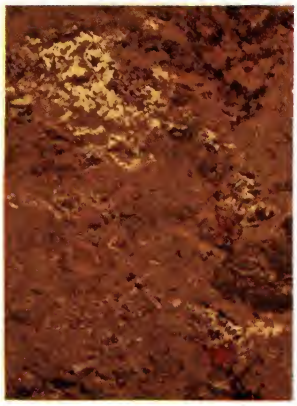
Florentine Marble No. 322



Venetian Red Marble No. 320



Ebony Marble No. 305



Old Rose Marble No. 321

Cordovan Marble No. 350

Armstrong's Accotile Design No. A60
Consists of: Black Gold Marble No. 360, Cordovan Marble No. 350, and Travertine Marble No. 340.

Armstrong's Accotile Design No. A30
Consists of: Regal Blue No. 231, Azure Blue No. 235, Lead Gray No. 261, and Steel Gray No. 266.

A Permanent, Washable Linoleum-Type Wall Covering

Description—Armstrong's Linowall is a permanent, beautiful, easy-to-clean wall covering made of a resilient inlaid linoleum composition (similar to that of Armstrong's Linoleum) processed on a closely woven flexible fabric backing. It has the characteristically smooth surface of linoleum; and the heavy facing of inlaid color is $\frac{1}{20}$″ thick, which assures much greater durability than is afforded by tile and marble substitutes with a film finish only a few thousandths of an inch in thickness.

Durability—Linowall is resilient and does not chip or crack when bumped by furniture. Unlike rigid materials, it has sufficient flexibility to withstand moderate settling of walls without cracking or buckling. Sunlight does not fade it, and surface moisture does not injure it. Linowall itself is waterproof; and by the use of a special adhesive, the seams also can be made waterproof.

Economy—At less cost, Linowall offers practically all the advantages of other permanent wall treatments and in many instances affords qualities not obtainable in other materials. Properly installed, it affords a lifetime finish that is attractive, sanitary, and waterproof. It will be found to be a real economy because, unlike most wall coverings, it does not have to be periodically replaced or refinished. Dirt, grease, and smoke or water marks can easily be removed by simple washing.

Because of its many desirable qualities, Linowall is finding wide use in hospitals, not only in private rooms and corridors, but in operating rooms as well. It is particularly adapted to modernizing work because of its light weight, long life, and reasonable cost.

Linosets—Like linoleum floors, walls covered with Armstrong's Linowall can be made more distinctive by inlaying special figures cut either from Linowall of other colors or from Armstrong's Linoleum. These Linosets can be cut to order at the Armstrong factory.

A recent development along decorative lines is the insertion in Linowall of figures carved in bas-relief from Armstrong's Linoleum. Since linoleum is easy to work, architects will find that such carvings can be executed inexpensively and without difficulty by any cabinetmaker competent in wood carving.

In homes or public buildings of modern character, strik-

Armstrong's No. 751 Blue Linowall provides a fade-proof washable wall covering in this cheerful kitchen. The floor is Armstrong's Embossed Inlaid Linoleum No. 5531. The drainboard is Armstrong's No. 27 Black Plain Linoleum.

ing effects can be obtained by using Linowall in combination with chromium stripping or other metal decoration.

Ceilings—In addition to being employed as a complete wall covering and as a wainscoting material, Linowall is often installed on ceilings. The method of installation is the same as on walls. There must be a good bond between the white coat and the brown coat, because the white coat has to carry the weight of the Linowall. Plaster should be sized. See page 34. Through the use of Armstrong's ¾″ Wax Fillet Strip, the Linowall used as a wall covering can be coved onto the ceiling without seams.

Colors—Linowall is offered in twenty-five colors and in a variety of tile, marble, and wood effects. Some of the patterns are illustrated on this and the next page.

Particular attention is called to No. 900 Knotty Pine as a suitable wall covering for studies, dens, libraries, private offices, restaurants, clubs, and living-rooms.

This knotty pine pattern has all the charm, softness, and depth of aged wood; but because Linowall is made to rigid standards for general tone, it assures the desired effect in the finished installation, which is not always obtainable when new wood is antiqued. It also eliminates the possibility of knots loosening or boards opening due to shrinkage of wood.

Sizes—Linowall is available in convenient continuous rolls; in exact cut quantities; in standard units 6′ wide by 9′ long, one to the package; and in standard half-size units 6′ wide by 54″ long, two to a package.

Widths—Patterns 700 to 754 inclusive are supplied 1 or 2 yds. wide; and in standard half-size units 6′ wide by 54″ long, two to a package. Pattern 900 is supplied 2 yds. wide only.

Specifications—See page 34.

Accessories—(*See drawings, page* 29.)—Armstrong's Metal Cap Strip (72″ lengths) and Armstrong's Concave (⅝″ radius) and Convex (⅝″ or 1″ radius) Metal Corner Pieces are available in green, ivory, buff, blue, orchid, brown, black, and chromium finish. For patterns in the 750 Series, convex corners of 1″ radius should be ordered. For all other patterns, use ⅝″ radius convex corners. The ⅝″ concave corners are for all patterns.

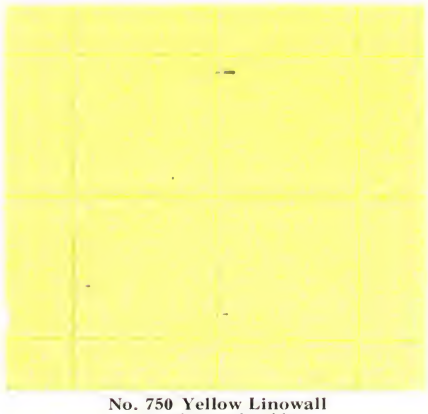
Linowall Fillet Strip (⅝″ radius) is supplied in 50′ rolls for curving Linowall over concave wall corners.

No. 738 Sage Linowall
1 and 2 yards wide

No. 737 Parchment Linowall
1 and 2 yards wide

No. 735 Pine Linowall
1 and 2 yards wide

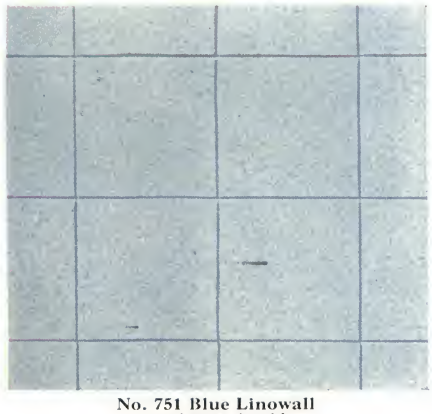
No. 752 Ivory Linowall
1 and 2 yards wide



No. 750 Yellow Linowall
1 and 2 yards wide

No. 753 Green Linowall
1 and 2 yards wide

No. 754 Rose Linowall
1 and 2 yards wide



No. 751 Blue Linowall
1 and 2 yards wide

No. 731 Colonial Blue Linowall
1 and 2 yards wide

No. 900 Knotty Pine Linowall
2 yards wide

No. 732 Dove Gray Linowall
1 and 2 yards wide

No. 700 Green Linowall
1 and 2 yards wide

No. 702 Travertine Linowall
1 and 2 yards wide

No. 733 Mulberry Linowall
1 and 2 yards wide

No. 706 Tan Linowall
1 and 2 yards wide

No. 704 Ivory Linowall
1 and 2 yards wide

No. 734 Canary Linowall
1 and 2 yards wide

No. 736 Walnut Linowall
1 and 2 yards wide

No. 705 Peach Linowall
1 and 2 yards wide

No. 703 Black Linowall
1 and 2 yards wide

11 70

Cove and Base—Armstrong offers five types of cove and base: (1) Metal Back; (2) Flash Type; (3) Rubber; (4) Cork Tile; (5) Accotile (base only). Dimensions and details are given on page 29.

Metal Back Cove and Base—A shaped metal piece faced with linoleum or Linowall is nailed to the subfloor and anchored with a metal binding strip nailed to the wall.

This type is ideal where the plaster wall does not reach the subfloor. It can be used with any gauge of Armstrong's Linoleum, Linotile, Rubber Tile, Accotile, Cork Carpet, Linoflor, or Mastic Armoflor.

Colors—The metal backing is furnished covered with linoleum Nos. 20 Plain Brown, 27 Plain Black, 02 Black Marbelle; or (on special order) with Linowall in the 700 Series (except No. 703) or in the 731 Series.

Inside and outside metal corner pieces 4½″ or 6″ high; right or left end stops 4½″ or 6″ high; and metal binding strip are furnished in brown, black, ivory, buff, green, orchid, blue, or chromium to harmonize with, but not to match, the linoleum or Linowall facings. See page 29.

Flash Type Cove and Base—With this type, linoleum of ⅛″ gauge or less, in any pattern, is coved over Armstrong's ¾″ radius Wax Fillet Strip (a fabric-covered plastic core supplied in 50′ rolls) up to a metal binding strip, which is nailed to the wall. The fillet strip forms a solid backing and is not affected by moisture. With linoleum flooring, the field or border can be run unbroken up to the binding strip.

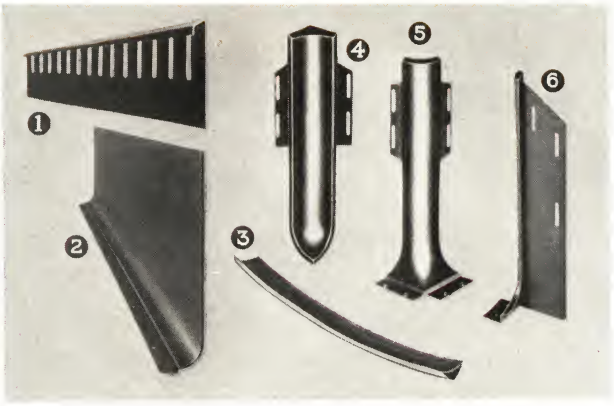
Corner pieces, end stops, and binding strip same as for Metal Back Cove and Base.

Rubber Cove Base and Accessories—Three types of molded rubber cove base, supplied in all standard Armstrong-Stedman Rubber Tile colors, are available with suitable corner pieces, end pieces, plinth blocks, stair treads, risers, threshold, and wainscot caps. The Sanitary Type Cove Base is available in flexible material, 4″ or 6″ high but with 5/32″ back only.

Cork Tile Cove and Base—Cork Tile bases, 4″ or 6″ high, and Cork Tile coves are available for ½″ or 5/16″ Cork Tile flooring in Light, Medium, and Dark Brown.

Accotile Base—Slabs of 6″ x 24″ Accotile, in any Accotile color, can be installed with Armstrong's Asphalt Cement.

Parts for flash type and metal back cove and base. Flash type requires metal binding strip (1), fillet strip (3), inside (4), and outside (5) metal corner pieces, and right or left end stops (6). Metal back requires metal binding strip (1), metal backing faced with linoleum or Linowall (2), inside (4), and outside (5) corner pieces, and right or left end stops (6). Flash type does not require (2). Metal back does not require (3).



OTHER PRODUCTS AND ACCESSORIES

Inlaid Linoflor consists of a linoleum "mix" keyed to an asphalt-saturated felt backing instead of burlap. It is an inexpensive flooring for rented property, temporary quarters, or other places where an investment in long-lasting inlaid linoleum might not be justified. It is a resilient, durable, genuine inlaid material available in eighteen patterns for a wide variety of purposes. It is installed in the same manner as linoleum (see Specifications, page 30) except that it can be pasted direct to wood subfloors, without using lining felt.

Armstrong's Cork Carpet is made of relatively large granules of cork and forms a quiet, resilient floor for churches, libraries, and other places where traffic is neither constant nor excessive, and where dirt is not tracked in in large quantities. It is excellent material for indoor tennis courts, gymnasiums, and running tracks. It is not recommended for kitchens, bathrooms, or other places where water is likely to be spilled.

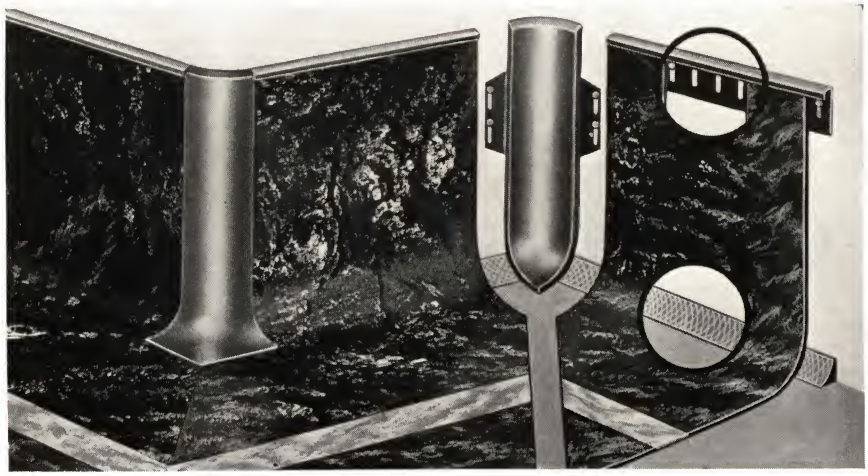
Cork Carpet is furnished in No. 31 Brown and No. 32 Green in ¼″ gauge, in rolls 2 yds. wide. In ordering, specify Armstrong's Unpolished Cork Carpet. It is installed in the same manner as linoleum (see Specifications, page 30).

Resilient Work Surfaces of Linoleum, Linotile, or Rubber Tile permit the introduction of color to these areas; and the resilience of these materials prevents clatter and breakage. The Linoleum, Linotile or Rubber Tile should be cemented direct to a 5-ply plywood base with Armstrong's Waterproof Cement and finished with a stock metal edging supplied by manufacturers of metal specialties. Names of such companies as are not listed in the present edition of Sweet's will be supplied upon request. Wood aprons or aprons of resilient tile can also be used. Special literature is available upon request.

Cork Bulletin Boards are available in wood-back and burlap-back types. The former consists of a layer of ¼″ thick cork composition mounted on a ¼″ compo board. It is supplied in standard 4′ panels up to 14′ long, which can be sawed into small units on the job or at the factory. The burlap-type has no wood backing and can be supplied in any length up to 90′ and in any width up to 72″. Larger sizes are furnished in sections.

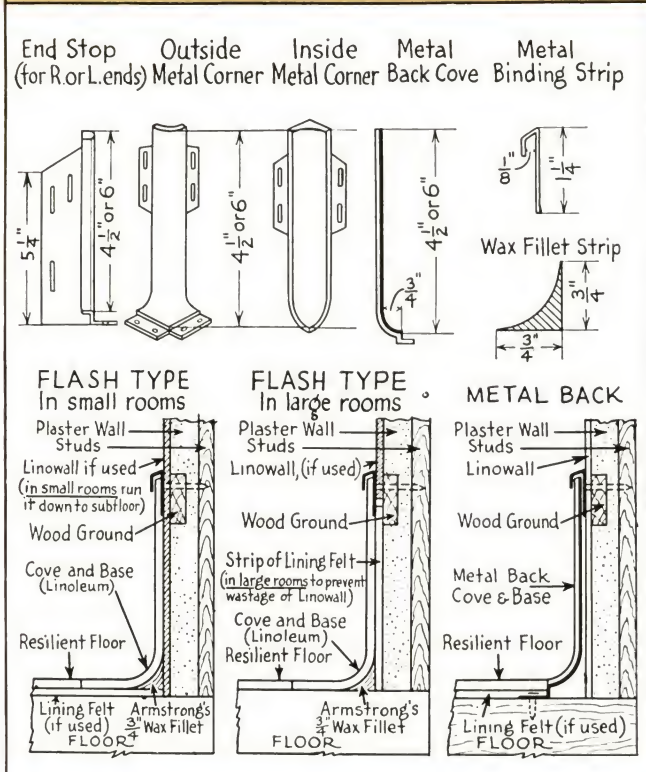
Both types are available in tan and green. Wood grounds 2″ x ⅞″ should be provided, and the bulletin boards should be nailed firmly in position and finished with a suitable molding. Tack boards shall be cemented to a finished plaster surface with Armstrong's Waterproof Cement.

Armstrong's Floor Fill should be used, as indicated in the specifications, for leveling uneven suspended wood or suspended concrete subfloors. Where the floor fill is to be less than ¾″ deep, use three volumes of clean sand, 1½ volumes Armstrong's Topping Cement, one volume portland cement. Where a fill ¾″ or greater is required, use three volumes of ½″ crushed stone or gravel, three volumes of clean sand, two volumes of Armstrong's Topping Cement, and one volume of portland cement. Complete specifications for the use of Armstrong's Floor Fill will be furnished upon request.

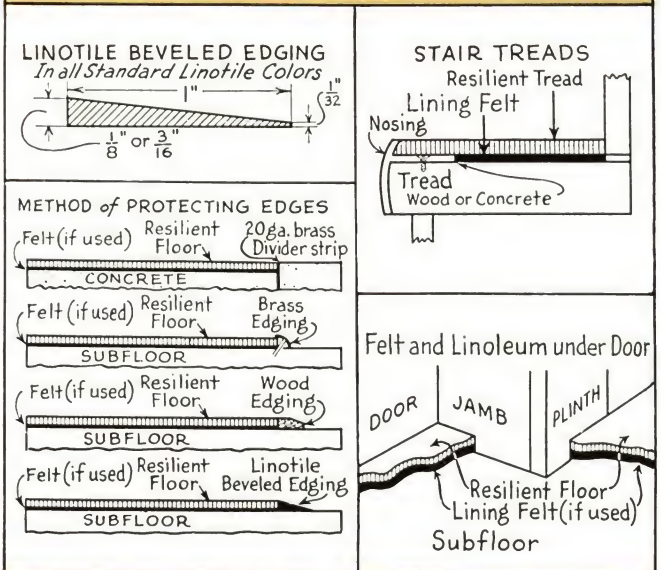


Flash type cove and base with linoleum cut back to show method of installing binding strip, corner pieces, and fillet. Metal end stops, not shown, are installed in approximately the same way as the corner pieces. Note that no seams occur in the resilient flooring close to the wall line.

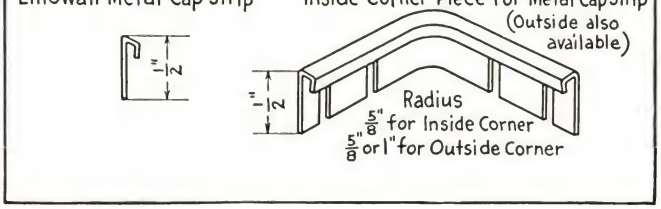
FLASH TYPE AND METAL BACK COVE AND BASE



MISCELLANEOUS INSTALLATION DETAILS

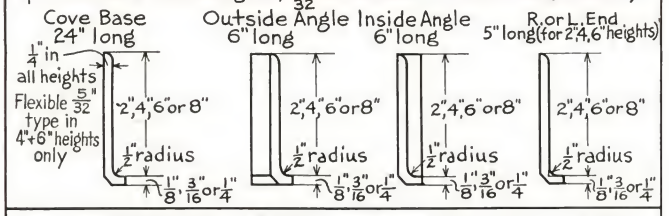


CAP STRIP FOR LINOWALL

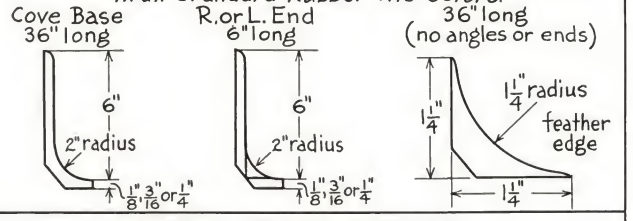


RUBBER COVE BASE

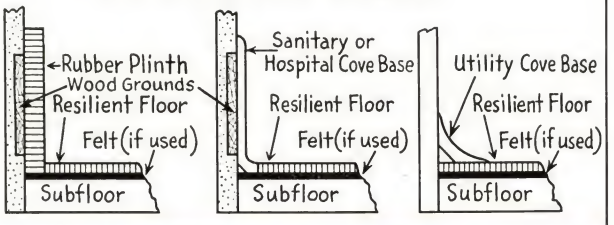
SANITARY TYPE *in all Standard Rubber Tile Colors.*
¼" thick back in all heights, 5/32" thick back in 4" and 6" heights only.



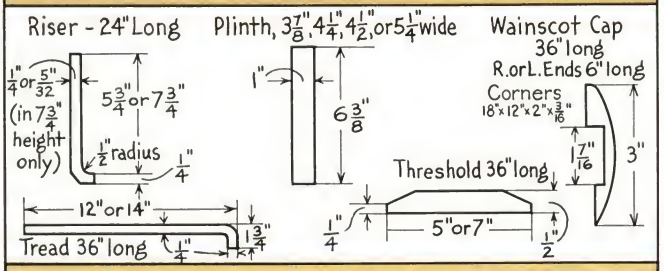
HOSPITAL TYPE ◦ ◦ ◦ UTILITY TYPE
in all Standard Rubber Tile Colors.



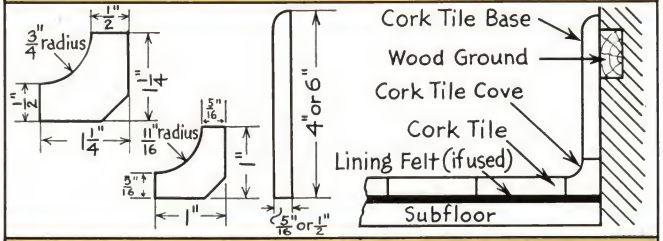
INSTALLATION DETAILS



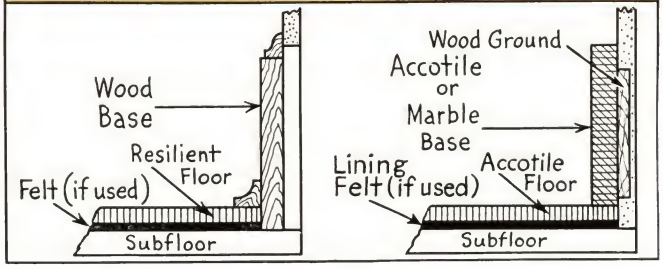
RUBBER ACCESSORIES
In all Standard Rubber Tile Colors



CORK TILE COVE AND BASE
In all Three Standard Shades of Cork Tile



WOOD, ACCOTILE, OR MARBLE BASES



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How to Use These Specifications

In the following pages of specifications, items have been grouped by trades. All essential subject matter is presented as pre-written specification clauses in bold-face type. Matter in light-face type is explanatory or indicates where the architect must fill in dimensions, brand names, etc.

To form a complete specification, simply copy all paragraphs except those whose application is expressly restricted to materials or conditions not pertinent to the job in hand.

Caution—Linoleum, Linotile, Cork Tile, Rubber Tile, Cork Carpet, or Linoflor should not be installed on any floor in direct contact with the ground, on or below grade. Armstrong's Accotile (asphaltic)—in special patterns developed specifically for this use—is the only type of resilient flooring recommended. Your Accotile contractor will supply a list of these patterns upon request. Accotile shall not be installed on floors subject to hydrostatic pressure. Any Accotile pattern may be used on suspended subfloors.

Armstrong's Mastic Armoflor may be installed over concrete in direct contact with the ground on grade, but not below grade.

BRIEF SPECIFICATION
For Any Armstrong Product

Armstrong's (Name products here.) **in the patterns, colorings, sizes, designs, and gauges herein specified, shall be furnished and installed on the areas listed below** (List here.)**:**

All products covered by these specifications are to be installed in accordance with Armstrong's standard specifications as printed in Sweet's Catalog File, Architectural, 1938, by a qualified handler of Armstrong products, whose work has been approved by Armstrong Cork Products Company, and whose bid shall include all the labor and materials required by these specifications.

RESILIENT FLOORING

Accotile — Cork Carpet — Cork Tile — Linoflor — Linoleum — Linotile — Mastic Armoflor — Rubber Tile

WORK OF RELATED TRADES

(Include [1] in contracts for carpentry, masonry, or metal subfloors.)

1. Subfloors shall be brought to a smooth, even surface (Specify distance.) **inches below the surface of the finished flooring.** (This distance is determined by allowing for thickness of resilient flooring, as shown in Table I, plus the thickness of the following materials if used: Lining Felt [1/16″], Saturated Lining Felt [1/16″], 1/8″ Temwood, 1/4″ Temboard, or Floor Fill. Allowance for Floor Fill varies, depending upon the unevenness of the existing subfloor.)

Wood Subfloors

Additional Items for Carpentry Contract

(Double wood subfloors are recommended for all resilient floorings.)

2. All subfloors throughout (Specify areas.) **shall be laid double. The bottom layer shall consist of 25/32″ t. & g. boards not over 6″ wide cut from 1″ stock laid at right angles to the joists and with ends cut square, staggered, and over bearings only. Boards shall be securely facenailed at each end and at every bearing with two 8d nails. The top layer, which shall be applied only after the building has been roofed, shall be installed as follows:**

(Use [3] or [4].)

3. The Contractor shall cover the t. & g. subfloor with 7/8″ t. & g. boards not over 3″ face width. Boards shall be laid at an angle of 45 deg. with respect to the boards in the underfloor, shall have end joints cut square, and shall be driven tight and blindnailed with 8d steel cut flooring nails.

(Never use [4] unless the single wood subfloor consists of t. & g. boards.)

4. The Contractor shall cover the entire surface of the t. & g. boards with Armstrong Cork Products Company's 1/4″ Temboard or 1/8″ Temwood, laid with the smooth side down. All seams shall be true and fitted close, with not over 1/16″ clearance. The Tem-

TABLE I—WEIGHTS AND GAUGES

The weights and gauges given in this table are manufacturing standards. Slight variations will occur; but for practical purposes, these figures are substantially correct.

Material	Approximate Thickness, In.	Finished Gauge, In.	Average Net Weight Per Sq. Ft. in Lbs.	Roll Width in Ft.
ACCOTILE	1/8	.125	1.18	
	3/16	.187	1.70	
	1/4	.250	2.40	
	3/8	.375	3.60	
CORK CARPET	1/4	.250	.78	6
CORK TILE	5/16	.312	.70	
	1/2	.500	1.00	
FELT				
Armstrong's Lining Felt	1/16		.111	3
Armstrong's Saturated Felt	1/16		.167	3
LINOFLOR	1/16	.079	.56	6
LINOLEUM*				
Plain				
6mm. (Battleship)	1/4	.235	1.56	6
3/16-inch (Battleship)	3/16	.187	1.28	6
Heavy (Battleship)	1/8	.125	.84	6
Medium	3/32	.095	.67	6
Standard	5/64	.075	.58	6
Jaspé				
3/16-inch	3/16	.187	1.20	6
Heavy	1/8	.125	.81	6
Medium	3/32	.095	.66	6
Straight Line Inlaid				
Heavy	1/8	.125	.97	6
Medium	3/32	.095	.78	6
Standard	5/64	.075	.63	
LINOLEUM, continued				
Embossed Inlaid				
Heavy	1/8	.125	.79	6
Medium	3/32	.095	.67	6
Standard	5/64	.079	.56	6
Handmade Marble Inlaid				
Heavy	1/8	.125	.97	6
Marbelle				
3/16-inch	3/16	.187	1.47	6
Heavy	1/8	.125	.95	6
Medium	3/32	.095	.72	6
Standard	5/64	.075	.61	6
Monobelle				
Heavy	1/8	.125	.94	6
Medium	3/32	.095	.72	6
Standard	5/64	.075	.61	6
Raybelle				
Heavy	1/8	.125	.97	6
Medium	3/32	.095	.78	6
Standard	5/64	.075	.63	6
LINOTILE	1/8	.125	1.00	
	3/16	.187	1.40	
	1/4	.250	1.90	
LINOWALL	1/20	.050	.40	3 & 6
MASTIC ARMOFLOR	5/64	.080	.577	3
RUBBER TILE	1/8	.125	1.15	
	3/16	.187	1.90	
	1/4	.250	2.35	

*The Armstrong Cork Company and other linoleum manufacturers in the United States have standardized on the five linoleum gauges shown above. All types of linoleum bearing the same gauge designation are now of identical thickness.

board or Temwood shall be securely nailed to the underfloor with 2d rosin-coated nails spaced not over 6″ apart in both directions and beginning at the outside edges of each piece as it is laid. Under no circumstances shall the Temboard or Temwood be installed over square-edged boards.

(Select clauses from [5] to [9] if existing floors are extremely uneven and are not to be leveled with Armstrong's Floor Fill.)

5. Existing floors throughout (Specify rooms.)

6—shall have all cracks wider than ⅛″ diameter and all holes larger than ¼″ diameter filled with snugly fitted pieces of wood or plastic wood.

7—shall have all loose and defective boards replaced with new sound material.

8—shall be renailed as necessary to make rigid and secure.

9. (Same as [4].)

(Include [10] for new construction or remodeling.)

10. Just prior to the application of the resilient flooring, the contractor shall scrape all uneven joints in the subfloor and leave a smooth, even, and clean surface suitable for the reception of the resilient flooring.

Concrete Subfloors

Additional Items for Masonry or Concrete Contract

(For concrete to be sufficiently dry to serve as a satisfactory base for any resilient flooring except Accotile or Mastic Armoflor, adequate ventilation is imperative in all spaces between the ground and the concrete.)

(The leveling and conditioning of existing concrete subfloors that are sound are provided for in the specification for the resilient flooring contractor.)

(Be sure to include [1].)

11. The surface of all concrete floors throughout (Specify areas.)

12—as well as the treads and the intermediate landings of stairs (Specify location.)

13—shall be steel troweled to a smooth, even, level, hard surface free from expansion joints, depressions, scale, or foreign deposits.

Stair Nosings

Items for Carpentry or Masonry Contract

14. On each stair tread (Specify locations.)

15—also including the top treads at all floors that will be covered with resilient flooring

16—and intermediate landings

17—the Contractor shall provide and install a continuous (Specify kind.) **nosing with top edge set so as to finish flush with the surface of the resilient flooring. Nosings shall be rigidly secured in place by** (Specify method.).

WORK OF RESILIENT FLOORING CONTRACTOR

Items for Resilient Flooring Contract

(Use [1] in a sub-contract or a contract direct with the owner.)

1. The General Conditions of the Contract for the Building, Fifth Edition, copyrighted 1937, issued by the American Institute of Architects, are a part of these specifications and the Contractor shall consult them in detail for instructions on his work.

2. The Owner shall provide good ventilation and maintain a temperature of at least 70° F. while the resilient flooring is being laid. He shall furnish hoisting service, adequate lighting, and power for scrubbing and polishing the flooring.

3. After the resilient flooring has been inspected and approved, the Owner shall cover it with heavy paper in rooms where painting or other work is to be done.

4. The Contractor shall carefully inspect all surfaces on which his materials are to be applied and shall report to the Architect in writing any unsatisfactory surfaces. Otherwise, the Contractor shall assume full responsibility for all failures and defects in his work resulting from such surfaces.

5. The Contractor, on completion of his work, as evidenced by final payment, shall provide the Owner with a written guarantee warranting that all workmanship and materials are free from defects and that he shall promptly repair or replace without additional cost to the Owner any and all such defects which evidence themselves within one year after the completion of his work.

Materials and Scope of Work

6. Throughout (Specify areas.) **the Contractor shall provide and install** (Specify kind of flooring—Linoleum, Linotile, Accotile, Cork Tile, Rubber Tile, Mastic Armoflor, Cork Carpet, or Linoflor.) **in the following gauges, pattern numbers, designs, and types:** (List here.). **All materials shall be manufactured by the Armstrong Cork Company and shall be delivered on the job in their original packages with seals unbroken and with the manufacturer's brand and name clearly marked thereon. No seconds or remnants shall be used.**

7. The resilient flooring shall be installed as follows: (Here indicate the kind of adhesive and lining felt to be used. To determine this, consult Table II.).

8. Before laying the resilient floor-

TABLE II—METHOD OF APPLYING RESILIENT FLOORINGS

The numbers refer to the paragraphs below, which indicate method of installation to be incorporated in Paragraph 7 in "Work of Resilient Flooring Contractor." Where two or more numbers are given, the first is the preferred and the others should be used only when special properties are desired, such as cushioning or waterproofing.

	Linoleum or Cork Cpt.	Linotile	Cork Tile	Rubber Tile	Accotile	Mastic Armoflor	Linoflor
Suspended Wood	1	1	1	5	7	2	2
Suspended Concrete	1 or 2	2 or 1	2 or 1	6 or 5	8	2	2
Concrete, Ceramic Tile, Marble, or Terrazzo in direct contact with ground, on or below grade	3	3	3	3	8	10	3
Suspended Ceramic Tile, Marble, or Terrazzo	1 or 2	1 or 2	1 or 2	6 or 5	8	2	2
Metal	4	4	4	6	9	10	4 or 10
Stair Treads — Wood or Concrete	2	2	2	6	8	2	2
Stair Treads — Metal	4	4	4	6	9	10	4 or 10

1. Armstrong's Lining Felt shall be bonded to subfloor with Armstrong's Linoleum Paste. Resilient flooring shall be bonded to felt with Armstrong's Linoleum Paste.

2. Resilient flooring shall be bonded direct to subfloor with Armstrong's Linoleum Paste.

3. Don't use.

4. Resilient flooring shall be bonded direct to subfloor with Armstrong's No. 210 Rustproof Cement.

5. Armstrong's *Saturated* Lining Felt shall be bonded to subfloor with Armstrong's Linoleum Paste. Resilient flooring shall be bonded to saturated felt with Armstrong's No. 236 Waterproof Cement.

6. Resilient flooring shall be bonded direct to subfloor with Armstrong's No. 236 Waterproof Cement.

7. Armstrong's Saturated Lining Felt shall be bonded to subfloor with Armstrong's Linoleum Paste. Accotile shall be bonded to the felt with Armstrong's Asphalt Cement.

8. See "Caution," page 30. Subfloor shall first be primed with Armstrong's Primer. Accotile shall be bonded direct to subfloor with Armstrong's Asphalt Cement. The Accotile shall be laid strictly in accordance with the manufacturer's latest specifications, a copy of which the Contractor shall obtain before starting work.

9. Accotile shall be bonded direct to subfloor with Armstrong's Asphalt Cement.

10. Resilient flooring shall be bonded direct to subfloor with Armstrong's Mastic Cement.

ing, the Contractor shall stretch lines on both axes and shall space the material from the center in both directions so that all margins and borders will work out to uniform size.

9. All materials shall be applied in such manner that the entire under surface of the finished flooring shall be securely bonded in place and the entire upper surface shall be smooth, clean, and free from all imperfections.

The width of borders may vary to allow for variations in the dimensions of the rooms and for the designs selected.

The field or border shall butt against the base and plinth blocks, which shall be carried down to the subfloor level.

All resilient flooring, after being cemented, shall be rolled with a suitable linoleum roller to eliminate air bubbles. Sandbags shall be laid along all joints in resilient flooring until all danger of loosening has passed.

After resilient flooring has been applied and rolled, the Contractor shall immediately wipe up all surplus adhesive and leave the entire work clean, smooth, level, and in a condition satisfactory to the Architect.

(Use [10] when runners of resilient flooring are specified.)

10. The edges of single strips of resilient flooring laid as runners shall be protected with Armstrong's Beveled Edging. Similar protection shall be given resilient floorings at doorways where the underfloor is not countersunk or where there are no thresholds.

Preparation of Subfloors

(Use [11] for existing wood, concrete, ceramic tile, terrazzo, marble, or metal subfloors if necessary. Omit [11] when wood floors are to be leveled with Temwood or Temboard.)

11. Badly worn floors or low places shall be leveled with Armstrong's Floor Fill applied in accordance with the maker's directions.

(Use [12] and [13] for modernization work.)

12. All paint and varnish on existing floors throughout (Specify areas.) shall be entirely removed, by sanding if necessary; otherwise with paint and varnish remover.

(Use [13] where existing floors are oiled or waxed.)

13. All oil and wax shall be entirely removed from the floor, by scraping and machine sanding if necessary; otherwise by thoroughly scrubbing with a strong solution of tri-sodium phosphate (Oakite, Climalene, etc.). The floors shall then be thoroughly rinsed. They shall be left smooth, even, and suitable for the reception of flooring materials.

(Use [14] where resilient floorings are to be laid over existing concrete floors.)

14. The Contractor shall repair any expansion score marks or cracks with a mixture of portland cement and plaster of Paris, finished flush with the surface of the floor. A chalky or dusty surface shall be swept clean and primed with Armstrong's Wall Size or Armstrong's Cork Tile Sealer.

(Use [15] for any existing floor that has been painted.)

15. A single coat of paint that is solid, dry, and well bonded to the concrete need not be removed. Where there are two or more coats, all shall be removed with a strong solution of tri-sodium phosphate (Oakite, Climalene, etc.).

(Use [16] for all resilient floorings except Accotile laid over concrete.)

16. The Contractor shall test the concrete for dampness, as follows: Form a ring of putty 6″ in diameter and ½″ high on the concrete at each corner and at the center of the room. Place a level teaspoonful of granulated anhydrous calcium chloride in a watch crystal within each ring, and cover each ring with a clock crystal, pressing the glass down on the putty so as to keep out all outside air. If the floor is damp, beads of moisture appear on the watch crystal in from 12 to 24 hours, and the calcium chloride will be all or partly dissolved. (This test is not an absolute guarantee of dryness, but merely an indication of excessive moisture. Wherever possible, concrete bases should be permitted to dry out for several months.)

17. The resilient flooring shall not be laid until concrete is thoroughly dry.

(Use [18] where resilient floorings are laid over tile, terrazzo, marble, and other non-absorbent subfloors.)

18. The subfloor shall be thoroughly scrubbed with a scrubbing machine, using soapy water and clean, sharp sand. Any joints or cracks shall be repaired with a mixture of portland cement and plaster of Paris finished flush with the surface.

(Use [19] for existing metal subfloors.)

19. Metal subfloors shall be true and even and shall be thoroughly cleaned of all dirt, grease, paint, rust, etc.

Adhesives

(Use [20], [21], [22], [23], or [24], depending upon the type of adhesive required, as indicated by Table II, page 31.)

20. Armstrong's Linoleum Paste shall be spread with a saw-toothed rubber paste spreader.

21. Armstrong's No. 210 Rustproof Cement shall be spread thin with a straight-edged steel trowel. The cement shall be allowed to set for 15 minutes before the resilient flooring is laid.

22. Armstrong's No. 236 Waterproof Cement shall be spread thin with a straight-edged steel trowel.

23. Mastic Cement shall be stirred to a uniform consistency. It shall be spread with a medium-sized, notched steel trowel and allowed to set 30 minutes before resilient flooring is installed.

24. Asphalt Cement and Accotile shall be stored in a room at a temperature of 75° F. for 24 hours before use. The Owner shall keep the temperature of all areas where asphalt cement and Accotile are to be installed at 75° F. for 24 hours before the cement is spread. The cement shall be stirred to a uniform consistency and shall be spread uniformly with a medium-sized, notched steel trowel. Enough shall be used to insure satisfactory contact with the back of the tile. The cement shall be allowed to set 15 to 30 minutes before Accotile is laid in it. The cement shall not be allowed to set overnight after spreading.

(Use [25] when Armstrong's Primer has been specified.)

25. Armstrong's Primer shall be well brushed into the pores of the concrete. The surface of the fresh concrete shall be sufficiently dry to absorb the prime coat. The Owner shall provide adequate ventilation; and the Contractor shall keep the primer and asphalt cement away from open flames. If the floor is very porous, a second coat of primer shall be applied. The Contractor shall allow the primer to dry before applying asphalt cement.

Lining Felt

(Use [26] when Armstrong's Lining Felt or Saturated Lining Felt has been specified.)

26. All lining felt shall be cut to fit accurately and shall be laid, with a minimum of seams, so that its length runs across the floor boards. Seams shall be butted and made tight. All cross-seams shall be staggered. After being pasted down, all lining felt shall be thoroughly rolled with a suitable linoleum roller, from the center out, so as to insure complete adhesion and remove air bubbles. All seams and edges shall be rolled until firm adhesion has been obtained.

Linoleum and Roll Goods

(Use [27] for linoleum.)

27. All linoleum shall be delivered to the job in full rolls and shall conform to Federal specifications LLL-L-351, and LLL-L-361.

(Use [28] for patterned linoleum, but not for Plain, Jaspé, Raybelle, Marbelle, or Monobelle.)

28. The cut edges of patterned linoleum shall be carefully butted and the pattern matched. No piecing of short ends shall be allowed. The linoleum shall be carefully scribed to form a tight joint at junctions with vertical surfaces.

(Use [29] when Plain, Jaspé, Raybelle, Monobelle, or Marbelle Linoleum is used in Medium, Heavy, 3/16″, or 6mm. gauges. Also use for cork carpet.)

29. Seams shall be made by overlapping the pieces ½″ to ¾″ and cutting the material with a linoleum seam cutter.

(Use [30] with Linoflor or with all gauges of patterned linoleum or with Standard Gauge Plain, Jaspé, Raybelle, Monobelle, or Marbelle Linoleum.)

30. Seams shall be made by overlapping the pieces not more than 3/16″ and cutting along a straightedge with a linoleum knife.

(Use [31] where linoleum, cork carpet, or Linoflor may be subjected to spilling or flooding of water from above.)

31. The Contractor shall seal all seams and edges with Armstrong's No. 236 Waterproof Cement.

(Use [32] where linoleum, cork carpet, or Linoflor is used over wood subfloors.)

32. Except where wasteful cutting would be required, the resilient flooring shall be laid so that all seams are at right angles to the floor boards. If this involves wasteful cutting, the resilient flooring shall be laid with its seams parallel to the floor boards; and 4″ strips of 4-oz. canvas or of Armstrong's Fabric Seam Protector shall

be pasted to the lining felt with Armstrong's Linoleum Paste, directly under the seams in the resilient flooring, so as to prevent open seams during the winter.

Stair Treads

(Use [33] when resilient stair treads and/or risers are specified.)

33. To overcome the offset caused by the flange of stair-tread nosing, the Contractor shall build up the area behind the flange with lining felt applied with a suitable adhesive.

Cork Tile

(Use [34] for unbeveled cork tile.)

34. The entire cork tile surface shall be machine-sanded with No. 00 sandpaper so as to produce a smooth, level finish. If considerable leveling of the cork tile is necessary, due to uneven subfloors, this sanding shall be preceded by a sanding with No. 1½ paper.

(Use [35] for all cork tile not prefinished at the factory.)

35. To all cork tile, the Contractor shall apply a brush coat of Armstrong's Cork Tile Sealer, which shall be allowed to dry for about 15 to 30 minutes; one coat of Armstrong's Cork Tile Undercoat, which shall be allowed to dry 15 to 30 minutes; followed by one coat of Armstrong's Linogloss Wax. The Cork Tile Undercoat shall be thoroughly buffed with a floor machine before the Linogloss Wax is applied.

(If cork tile has been supplied factory-finished, use [36] instead of [35].)

36. All cork tile surfaces shall be given one coat of Armstrong's Linogloss Wax and shall be thoroughly buffed with a floor machine.

Cleaning

(Use [37] for linoleum, Linotile, cork carpet, Linoflor, or Mastic Armoflor.)

37. After allowing the resilient flooring to set for at least twelve hours, the Contractor shall wash it with a solution of Armstrong's Floor Cleaner, rinse it thoroughly with clear, cold water, and apply one thin coat of Armstrong's Linogloss Wax.

(Use [38] for Accotile only.)

38. Accotile shall not be washed or waxed for two weeks after installation. Two weeks after installation, the Contractor shall clean it with Armstrong's Floor Cleaner, rinse it with clear, cold water, and apply one thin coat of Armstrong's Linogloss Wax.

(Use [39] for rubber tile only.)

39. Not sooner than five days after the rubber tile has been installed, the Contractor shall wash it thoroughly, using the method currently recommended by Armstrong Cork Products Company, and shall apply one thin coat of Armstrong's Linogloss Wax.

FLASH TYPE OR METAL BACK COVE AND BASE

WORK OF RELATED TRADES

Items for Masonry Contract

(Use [1] for Metal Back Cove and Base with concrete subfloors in new construction.)

1. In (Specify areas.) **a continuous white pine wood ground 1⅛″ wide and not less than ⅞″ thick shall be set in the concrete subfloor, flush with the surface, and with its center 1¼″ from the finished wall line.** (The bottoms of the metal backing, corner pieces, and end stops are nailed to this wood ground.)

Items for Carpentry Contract

(Use [2] for Metal Back or Flash Type with concrete or plastered walls in new construction. Also for existing plastered walls, unless the plaster is sound and the lath is rigid and not springy, in which case the binding strip, end stops, and corners may be nailed to the studs and lath.)

2. On all walls throughout (Specify areas.) **the Contractor shall provide and install continuous white pine grounds flush with the finished wall surfaces. The ground shall be 1¼″ wide and not less than ⅞″ thick, with its center line set parallel to and** (Specify 5⅜″ for 6″ high base; 3⅞″ for 4½″ high base.) **above the surface of the subfloor.** (The binding strip and tops of the corner pieces and end stops are nailed to this wood ground.)

(Use [3] for concrete walls only.)

3. Grounds shall be built into the forms and securely anchored in the concrete so as not to be damaged by the removal of forms.

Items for Plastering Contract

(Use [4] for new construction or modernizing.)

4. All plaster shall be made smooth, even, and free from pits or other imperfections.

(Use [5] for Flash Type in new construction.)

5. All plastering on walls throughout (Specify areas.) **shall be carried below the wood grounds to the subfloor.**

(Use [6] for Flash Type in modernization.)

6. The Contractor shall provide new plaster to fill all spaces between bottom of existing plaster and the top of existing flooring.

WORK OF RESILIENT FLOORING CONTRACTOR

Items for Resilient Flooring Contract

1. Throughout (Specify rooms.) **the Contractor shall provide and install Armstrong's** (Specify Flash Type or Metal Back.) **Cove and Base in** (Specify colors and 4½″ or 6″ height.)

(Use [2] for Metal Back Cove and Base with existing concrete subfloors.)

2. The Contractor shall set ⅝″ diameter wood plugs, not less than 1″ long, into the concrete subfloor, flush with the surface and spaced not less than 6″ and not more than 12″ apart, with their centers 1¼″ from the finished wall line. (The bottom of the metal backing is nailed to these plugs.)

(Use [3] for Metal Back or Flash Type on existing concrete floors.)

3. The Contractor shall set ⅝″ diameter wood plugs, not less than 1″ long, into the concrete subfloor at all points where Armstrong's Metal End Stops or Outside Metal Corner Pieces are required.

(Use [4] when Flash Type or Metal Back Cove and Base is to be used on existing concrete walls.)

4. The Contractor shall set ⅝″ diameter wood plugs, not less than 1″ long, in the walls at the proper height and at intervals of not more than 12″ and not less than 6″, flush with the wall surface, for nailing Armstrong's Metal Binding Strip. Similar plugs shall be installed in the wall at all points where Armstrong's Metal End Stops or Corner Pieces are required.

5. The end stops and corner pieces shall be installed first, with rosin-coated, flat-headed nails long enough to thoroughly secure them flush and tight to the wall. The metal binding strip shall then be installed flush with the tops of the corner pieces and end stops. Flat-headed, rosin-coated nails of suitable length, spaced at least every 6″, shall be driven through the middle of the nail-hole slots, so as to hold the binding strip securely and perpendicularly against the wall.

(Use [6] for Flash Type Cove and Base only.)

6. Armstrong's ¾″ Wax Fillet Strip shall be pasted in place with Armstrong's Linoleum Paste or Armstrong's No. 236 Waterproof Cement at the intersection of the wall and

(Use [7] when resilient flooring is pasted direct to subfloor.)

7—subfloor.

(Use [8] when the resilient flooring is laid over lining felt.)

8—top surface of the lining felt, which shall continue back under the fillet to the wall line.

9. The face of the fillet shall be formed to the proper curvature with a ball tool or corner-forming tool.

(Use [10] for Flash Type Cove and Base only.)

10. A strip of linoleum of ⅛″ gauge or less shall then be pattern scribed, coved, locked under the binding strip, and pasted in place with Armstrong's Linoleum Paste or Armstrong's No. 236 Waterproof Cement. Where the linoleum joins the corners or end stops, it shall be mitered and trimmed to fit neatly.

(Use [11] for Flash Type or Metal Back Cove and Base when the resilient flooring is thinner than the coved linoleum.)

11. The resilient flooring shall be built up with lining felt, adhesive, and kraft paper at the juncture with the coved linoleum. The felt shall be sandpapered to a featheredge away from the cove and toward the center of the room.

(Use [12] for Flash Type or Metal Back Cove and Base when the gauge of the re-

silient flooring is such that the resilient flooring projects above the coved linoleum.)

12. The under edge of the resilient flooring shall be lightly sanded to bring it flush with the coved linoleum.

ACCOTILE BASE—CORK TILE COVE AND BASE—RUBBER COVE BASE AND PLINTH

WORK OF RELATED TRADES

Items for Carpentry Contract

(Use [1] for Cork Tile Cove and Base; for Accotile base; for the Hospital Type and the 4″, 6″, or 8″ Sanitary Type Rubber Cove Base; and also for The Rubber Plinth. The 2″ Sanitary Type Rubber Cove Base and the Utility Type Rubber Cove Base do not require wood grounds, but the plaster or concrete wall should be smooth, true, and even.)

1. On all walls and partitions throughout (Specify areas.) **the Contractor shall provide continuous white pine grounds of proper thickness and shall install them flush with the finished wall surfaces. The ground shall be 3″ wide, set with the bottom edge ¼″ above the subfloor surface.**

(Use [2] for concrete walls only.)

2. Grounds shall be built into the forms and securely anchored in the concrete so as not to be damaged by the removal of forms.

Items for Plastering Contract

3. All plastering on walls and partitions throughout (Specify areas.) **shall be carried down below the base grounds to the subfloor. The plaster above and below the wood grounds shall be flush with the face of the grounds. The surface of the intersection of the wall and floor shall be left true, even, and free from dirt or foreign matter.**

(Use [4] for modernization work.)

4. The Contractor shall provide new plaster finished flush with the existing plaster to fill all spaces between bottom of existing plaster and the top of existing flooring.

WORK OF RESILIENT FLOORING CONTRACTOR

Items for Resilient Flooring Contract

1. Throughout (Specify areas.) **the Contractor shall provide**

(Use [2] for Accotile Base.)

2—a base of 6″ x 24″ Accotile (Specify ⅛″, 3/16″, ¼″, or ⅜″ thickness.) **thick in colors selected by the Architect; shall firmly butt it against the finished flooring; and shall securely paste it to the wall surface with Armstrong's Asphalt Cement.**

(Use [3] for Rubber Cove Base.)

3—Armstrong-Stedman Rubber Cove Base using (Specify type, size, colors, and thickness.). **The Contractor shall provide all coved corner pieces, plinths, and end stops. These shall be secured firmly in position with Armstrong's No. 236 Waterproof Cement and shall make a neat tight joint all around with the finished flooring.**

(Use [4] for Cork Tile Cove and Base.)

4—Armstrong's Cork Tile Cove and Base using their (Specify light, medium, or dark shade and 4″ or 6″ height.). **The cove and base shall be pasted in place with Armstrong's Linoleum Paste and fastened with tempered headless steel brads. The cove and base shall be sanded to a smooth and even surface and left clean and in good condition.**

LINOWALL

WORK OF RELATED TRADES

Plaster Walls

Items for Plastering Contract

1. Throughout (Specify areas.) **the putty coat of plaster shall be finished to a smooth, even surface with all corners plumb. All inside corners shall be rounded to ⅝″ radius. Metal beading shall be omitted on all outside corners.**

(Use [2] if rounded outside corners are desired.)

2. All outside corners shall be rounded to a radius of (Specify 1″ for 750 Series patterns, but ⅝″ for all other patterns.).

(Use [3] if square outside corners are desired.)

3. All outside corners shall be finished square.

Wallboard Walls

Items for Carpentry Contract

4. The Contractor shall provide and rigidly install horizontal cross headers between the studs of all walls and partitions in (Specify areas.). **One row of headers shall be installed at the top and one at the bottom edge of wallboards, with intermediate rows every 24″ or 36″ apart.**

5. Throughout (Specify areas.) **the Contractor shall install** (Specify brand and thickness.) **wallboard.**

Items for Wall Covering Contract

1. All wall surfaces throughout (Specify areas.) **shall be covered with Armstrong's Linowall of colors selected by the Architect. The work shall be done in accordance with the manufacturer's latest standard specifications, a copy of which the Contractor shall obtain.**

2. All plaster walls shall be thoroughly dry throughout and shall be treated with a brush coat of Armstrong's Wall Size before applying Linowall Paste and hanging the Linowall. Plaster of very hard non-porous

(All wallboards shall have a surface smooth enough so that no markings will show through the Linowall. Plywood, hard-pressed boards and the so-called plaster boards faced with smooth cardboard are satisfactory. Boards fabricated of laminated layers of paper or non-waterproof paper pulp or spongy boards of loose-pressed fibrous materials, are not recommended. In no case can a guarantee be given against walls fabricated of boards which buckle due to the absorption of moisture.

(Wallboards are not recommended around built-in tubs. Plaster is recommended, but when wallboard must be used, include [6].)

6. Cross-headers shall be installed around built-in tubs at the height of the tub. The wallboards shall be plywood or hard-pressed boards. Before nailing them around the tub, the Contractor shall apply Armstrong's No. 236 Waterproof Cement to the edges of the boards that butt to the flange of the tub, and to both sides of the boards, to a height of 6″ from the bottom.

7. All joints shall be vertical and shall occur over bearings only. Space between boards shall be approximately 1/16″.

(Use [8] for hard-pressed boards.)

8. Wallboards shall be erected with the "wire" side exposed.

9. All wallboard shall be rigidly secured to all horizontal and vertical supports with 4d blued galvanized or coated nails spaced not over 6″ apart, ½″ from the edges of all wallboards. All nail heads shall be set with a punch. After erection, all cracks between wallboard units, all countersunk nail-head holes, and all dents or other surface imperfections shall be filled flush with non-shrinking plastic, which shall be sanded to a smooth finish when dry and hard.

Fixtures

Items for Electrical and Plumbing Contracts

10. Throughout (Specify areas.) **lighting fixtures, switch plates, and other wall fixtures,**

11—plumbing fixtures, radiators, towel racks, soap dishes, and other bathroom fixtures, except built-in tubs

(Use [12] for new construction.)

12—shall not be placed until the Linowall has been installed.

(Use [13] for modernization work.)

13—shall be carefully taken down, stored, and replaced after the Linowall has been installed.

WORK OF LINOWALL CONTRACTOR

(Use [13] for Metal Back Cove and Base only.)

13. The curved and faced metal backing shall be installed next. The top of it shall be forced under the metal cap strip and tight against the metal corner pieces. The bottom of it shall be forced tight to the subfloor and fastened there with flatheaded, rosin-coated nails of suitable length.

finish shall be buffed lightly with sandpaper to insure penetration of the size.

(Use [3] where Linowall is to be applied to existing plastered walls in modernization work. Where scored Keene Cement has been used, special instructions will be furnished on request.)

3. Old wall paper, oilcloth, burlap, water paints, whitewash, etc., shall be completely removed before Linowall is applied. Oil paints or enamel need not be removed entirely if they are firmly bonded to the wall. However, the film shall be thoroughly scored and cut through to the plaster with a coarse No. 3 sandpaper.

4. Cracks, holes, and dents in plaster, and all spaces between wallboards shall be patched with a quick-setting patching plaster, which shall be sanded to a smooth, level finish when dry and hard.

5. In cold weather, Linowall shall be kept in a room of 70° F. temperature for 48 hours before unrolling. The Owner shall heat rooms where Linowall is to be installed to 70° F. for 12 to 15 hours before work begins, so that the walls will be at a temperature of approximately 70° F. After installation of Linowall, the Owner shall maintain this temperature until the adhesives have thoroughly set (at least 12 hours).

6. All Linowall shall be installed with Armstrong's Linowall Paste or Armstrong's Waterproof Cement, in accordance with the manufacturer's directions.

(Use [7] except where modernistic or other unusual decorative effects are desired.)

7. All seams shall be vertical.

8. All seams except those on square-finished, butted, outside corners shall be at least 6″ away from any corner.

9. Butted seams on outside corners shall be made and finished in strict accordance with the manufacturer's directions.

(Use [10] when tile patterns and rounded outside corners are specified.)

10. The job shall be laid out so that the centers of the blocks in the pattern fall on the apex of the rounded outside corners, with the vertical joinings between the blocks to either side of the rounded corner.

11. After the Linowall has been applied, it shall be well rolled and smoothed with the hands, from the center of the piece in all directions to the edges, to eliminate air pockets.

12. Paste spots, finger marks, etc., shall be removed from the face of the Linowall with a clean cloth dampened with a solution of Armstrong's Floor Cleaner.

Metal Cap Strip and Corner Pieces

(Use [13] for Linowall 750 Series.)

13. Armstrong's 1″ radius Outside and 5/8″ radius Inside Corner Pieces and Armstrong's Metal Cap Strip shall be securely nailed in place before the Linowall is hung.

(Use [14] for all Linowall series except 750.)

14. Armstrong's 5/8″ radius Outside and Inside Corner Pieces and Armstrong's Metal Cap Strip shall be securely nailed in place before the Linowall is hung.

(Use [15] where Linowall is not coved onto the ceiling and fillet strip is used as trim.)

15. At the junction of Linowall with the ceiling, the Contractor shall install a continuous strip of Armstrong's 3/4″ Wax Fillet Strip pasted with Armstrong's Linowall Paste to the Linowall. He shall paint the strip (Specify color.).

(Use [16] when a plaster cornice has not been specified in the plastering specifications.)

16. After the Linowall has been hung, it shall be finished at the ceiling line with a cornice molding (Specify profile and color.).

(Use [17] when Linowall is to be coved onto the ceiling.)

17. Armstrong's 3/4″ Fillet Strip shall be pasted at the junction of the ceiling and side walls. The Linowall shall be pasted over it in accordance with the manufacturer's directions.

Special Metal Trim

(So many shapes, sizes, and finishes of metal trim are made and required for wall work that detailed directions for installation cannot be given here. However, names of reliable manufacturers will be supplied upon request. Furnish complete information as to the type required and its planned use with Linowall.)

Linosets, Inlays, Custom Designs

(Where inlays of metal, glass, or hand-carved linoleum are to be used with Linowall, specifications, working details, and other data will be furnished upon request.)

CORK TILE WAINSCOTING

WORK OF RELATED TRADES

Items for Plastering Contract

(Use [1] for new construction, for the replacement of old plaster, and when brick, hollow tile, or other masonry walls are to be finished with Cork Tile. All brick, hollow tile, and other masonry walls must be above grade and thoroughly dry before the plaster and Cork Tile are applied.)

1. In all areas where Cork Tile is to be installed on walls, the white coat shall be omitted; and the brown coat shall be brought to a true, even, smooth finish.

Items for Carpentry Contract

(Use [2] when Cork Tile is to be applied over wallboards. Do not specify loosely pressed building boards of fibrous materials or paper pulp boards. Boards consisting of a core of plaster faced with smooth cardboard, such as gypsum plaster lath, must be used.)

2. In all areas where Cork Tile is to be applied over wallboards, the wallboards shall be (Specify brand.) **in sizes not larger than 16″ x 32″. Wallboards shall be well facenailed. Joinings shall be made on the studs, with at least 1/16″ between boards.**

WORK OF CORK TILE CONTRACTOR

Items for Wall Covering Contract

1. Throughout (Specify areas.) **the Contractor shall provide and install Armstrong's** (Specify standard or beveled Cork Tile, gauge, and colors.) **in patterns selected by the Architect. All Cork Tile shall be made from a select grade of pure cork, homogeneous from face to back, free from foreign substances, and thoroughly and evenly baked throughout.**

The Contractor shall size all plaster and concrete walls with Armstrong's Wall Size before applying the Cork Tile. He shall make sure that all plaster is thoroughly dry and seasoned and well keyed to the lath. If the plaster is white coated, he shall make sure the bond of the white coat is tight and substantial. He shall clean painted plaster of anything that can be wiped off with a dry cloth. Water paints, grease, or dirt shall be thoroughly washed off. Soft, greasy soap shall not be used. Oil paints or enamel need not be removed if they are in excellent condition, but the paint or enamel shall be thoroughly scratched with No. 3 sandpaper or an ice shaver. The Contractor shall remove all discolored, blistered, cracked, scaly, or peeling paint and all oilcloth, burlap, or wall paper.

All Cork Tile shall be laid in Armstrong's Linoleum Paste. Any paste on the surface of the tile shall be removed by rubbing with a damp cloth. The lines between the tiles shall be straight, so as to preserve the symmetry of the design.

(Use [2] for unbeveled Cork Tile.)

2. All unbeveled Cork Tile shall be sanded smooth and level after installation, and the surface shall be left smooth, clean, and in good condition.

(Use [3] for Cork Tile that has not been factory-finished.)

3. All Cork Tile shall be finished with one brush coat of Armstrong's Cork Tile Sealer, which shall be allowed to dry 15 to 30 minutes; one coat of Armstrong's Cork Tile Undercoat, and one coat of Armstrong's Linogloss Wax. The Cork Tile Undercoat shall be thoroughly buffed before the Wax is applied.

(Use paragraph [4] when Cork Tile has been supplied finished at the factory.)

4. All factory-finished Cork Tile shall be given one coat of Armstrong's Linogloss Wax and thoroughly buffed.

ARMSTRONG OFFICES

ALBANY, N. Y.	1-3 Thacher Street
ATLANTA, GA.	424-26 W. Peachtree St.
BOSTON, MASS.	286 Congress St.
BUFFALO, N. Y.	329-331 Ellicott St.
CHARLOTTE, N. C.	508 Johnston Building
CHICAGO, ILL.	13th Floor, Merchandise Mart
CINCINNATI, OHIO	232 W. Seventh Street
CLEVELAND, OHIO	812 Huron Road
COLUMBUS, OHIO	37 N. Third St.
DALLAS, TEXAS	1022 Santa Fe Bldg.
DENVER, COLO.	511-514 Interstate Trust Bldg.
DES MOINES, IOWA	225 Fifth Street
DETROIT, MICH.	1627 W. Fort Street
HOUSTON, TEXAS	903 Marine Bank Bldg.
INDIANAPOLIS, IND.	863 Massachusetts Avenue
JACKSONVILLE, FLA.	1224 Barnett National Bank Bldg.
KANSAS CITY, MO.	1535 Walnut Street
LOS ANGELES, CAL.	1206 Maple Avenue
LOUISVILLE, KY.	1420 Heyburn Building
MILWAUKEE, WIS.	1300 Majestic Bldg.
MINNEAPOLIS, MINN.	512-515 Plymouth Bldg.
NEW ORLEANS, LA.	219-223 Tchoupitoulas St.
NEW YORK, N. Y.	295 Fifth Avenue
OMAHA, NEBR.	109 S. Tenth Street
PHILADELPHIA, PA.	1520 Locust Street
PITTSBURGH, PA.	24th St. & Allegheny River
ROCHESTER, N. Y.	1 Mt. Hope Avenue
ST. LOUIS, MO.	1215 Washington Avenue
SAN FRANCISCO, CAL.	Western Furniture Exchange Market at Tenth Street
SEATTLE, WASH.	803 Terminal Sales Bldg.
WASHINGTON, D. C.	810 18th St. N. W.

ARMSTRONG CORK PRODUCTS COMPANY
Lancaster **Pennsylvania**

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"Personal-ized Floors" Issue

Reg. U.S. Pat. Off.

SEALEX FLOORS AND WALLS

TRADEMARK REGISTERED

Products of Congoleum-Nairn Inc., Kearny, N.J.

CONGOLEUM-NAIRN INC.—Architectural Service Department

GENERAL OFFICE

195 Belgrove Drive
Kearny
New Jersey

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DISTRICT OFFICES

New York — Chicago
Pittsburgh — San Francisco
Philadelphia — Boston
Kansas City — Dallas
Minneapolis — Atlanta

GENERAL INFORMATION, Complete information, specifications and color charts are included in our catalogues "Resilient Floors" (A. I. A. File No. 23j) and "Sealex Wall Linoleum" (A.I.A. File No. 28c). Our nearest district office will be glad to supply you with these catalogues and to consult with you on resilient flooring problems.

Sealex Linoleum

Description—Sealex Linoleum is an exceedingly durable product manufactured to comply in every respect with the exacting requirements of the U. S. Government Specification for linoleum. It is made from the best grades of linseed oil, driers, gums, cork flour and pigments. These ingredients are combined by the Sealex Process into a material of dense yet resilient composition. One important result of this process is that all minute pores are sealed to render the goods stain-proof and spot-proof.

Moderate Installation Cost—Sealex Linoleum is moderate in price and inexpensive to install. In modernization work it usually can be applied right over the old floors without costly preparation.

Low Maintenance Cost—Sealex Linoleum is water-proof, stain-proof and easy-to-clean. No further maintenance than occasional light waxing keeps it looking like new for years — even when subject to the heaviest foot-traffic. Colors cannot wear off for they are inlaid right through the material. The expense of periodic painting or refinishing of wood floors mounts higher in the long run than the installation cost of Sealex Linoleum.

Personal-ized Floors

With the introduction of *Personal-ized Floors of Sealex Linoleum*, Congoleum-Nairn Inc. provides the architect with the means for achieving truly individual floor effects *at low cost.* Much care and study have been devoted to the development of the wide range of prefabricated Sealex Insets, Feature Strips, and Borders. The great resources of this new *Personal-ized* Floors material afford practically limitless opportunity for original and artistic designs.

The five types of Sealex Linoleum

SEALEX VELTONE LINOLEUM Unusual decorative beauty, ease of cleaning and low maintenance cost make floors of Sealex Veltone Linoleum ideal for both residential and commercial installations. Furthermore, as the colorings in Sealex Veltones are richly blended "all-over" effects, they do not show tracked-in dirt or footprints . . . making this flooring practical to a degree seldom found in any product of such high decorative values.

SEALEX INLAID LINOLEUM With their rich veinings and gorgeous colorings, Sealex Inlaids offer a distinctive variety of patterns designed to meet the decorative requirements of the very finest interiors. The large scale designs are especially favored for public buildings, offices, lobbies and shops that require an attractive and yet thoroughly practical flooring. And there is an extensive selection of more intimate design effects in smaller scale, handsome and appropriate for every type of residential interior.

SEALEX BATTLESHIP LINOLEUM Because of its high resistance to heavy traffic, Sealex Battleship Linoleum is especially adapted to the following uses: Corridors, Office Working Spaces, School Rooms, Gymnasiums, Stores, Assembly Halls.

SEALEX PLAIN LINOLEUM Lighter in weight than Sealex Battleship Linoleum, Sealex Plain Linoleum is nevertheless sturdy and durable. Available in a wide variety of colors, it affords to architects the opportunity of designing custom floors for those areas where individual treatment is required.

SEALEX JASPÉ LINOLEUM Durable enough for the heavy traffic of commercial areas, Sealex Jaspé Linoleum is also sufficiently decorative for residential use. This attractive two-toned material is widely installed in: Corridors, Assembly Halls, Bedrooms, Office Spaces, Schools, Hospital Rooms, Gymnasiums, Living Rooms, Libraries.

Installation of Sealex Linoleum

Field Service: A corps of trained contract representatives, located throughout the country, is at the service of owners, architects and contractors.

Sealex Linoleum should never be installed on floors of wood or concrete which are in direct contact with the ground or below grade.

Wood Underfloors: Over wood, Sealex Linoleum without adhesive back should be laid over 1 lb. felt. This interliner is cemented to the floor with Sealex Green Label Paste. Linoleum is cemented to the felt with the same adhesive. *(See detailed specifications on Page 15.)*

Concrete Underfloors: When installed over concrete underfloors, Sealex Linoleum without adhesive back should always be cemented directly to the underflooring. *(See specifications on Page 15.)*

Adhesive Sealex Linoleum is applied directly to either wood or concrete floors without the use of lining felt. The adhesive applied at the factory is softened and activated by wetting with water. No other paste or adhesive is required for the satisfactory installation of Adhesive Sealex Linoleum. *(See detailed specifications on Page 8.)*

Weight, Gauge and Color Tables

SEALEX VELTONE LINOLEUM

(See page 4 for color card)

Color	3/16" Gauge 4.76 mm. .183-.193 inch	Heavy Gauge 3.18 mm. .120-.130 inch	Medium Gauge 2.40 mm. .095 inch	Standard Gauge 1.91 mm. .075 inch
Dark Blue	Not Made	2909	6909	7209
Rust	Not Made	2915	6915	7215
Black with Yellow	Not Made	2919	6919	7219
Marsh Green	1941	2941	6941	7241
Vulcan Black	1959	2959	6959	7359
Circassian	1968	2968	6968	Not Made
Tan Mottled Black & Orange	1970	2970	6970	Not Made
Evergreen	1972	2972	6972	7372
Oak Brown	Not Made	2983	6983	Not Made
Paisleygray	1974	2974	6974	Not Made
Mahogany Red	1976	2976	6976	7376
Delft Blue	Not Made	2977	6977	7377
White Mottled Black	1980	2980	6980	7380
Verde Antique	1989	2989	6989	Not Made

This is only a partial list of Veltone Patterns.
For complete list and illustrations, see new Resilient Floors Catalogue.

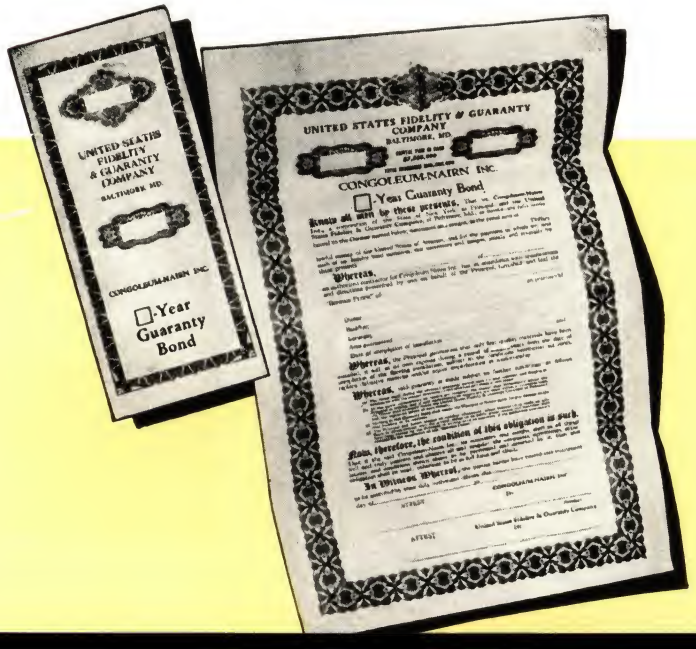
SEALEX INLAID LINOLEUM

(See page 7 for color card)

Sealex Inlaid Linoleum is manufactured in several weights, but only the Heavy Gauge is recommended for "commercial" uses—that is, in stores, public buildings, institutions, etc. Actual thicknesses of the various gauges are as follows:

	Inches	Mm
Heavy Gauge	.125	3.18
Medium Gauge	.095	2.40
Standard Gauge	.075	1.91

Where decimal inch tolerances are given in these tables they are the upper and lower limits for the respective gauges, as established by U. S. Government standards.



SEALEX PLAIN LINOLEUM

(See page 5 for color card)

Pattern No.	Color	1/8" Gauge 3.18 mm. (.120-.130 inch)	Medium Gauge 2.40 mm. (.095 inch)	Standard Gauge 1.91 mm. (.075 inch)
1100	Craft Brown	See 1/8" Battleship—1000 series	x	x
1101	Moss Green		x	x
1102	Terra Cotta		x	x
1103	Slate Gray		x	x
1104	Mahogany		x	x
1105	Black		x	x
1110	Yellow	x	x	x
1113	Ivory White	x	x	x
1114	Pacific Blue	x	x	x
1116	Olympic Blue	x	x	x
1118	Coffee Brown	x	x	x
1119	Jade Green	x	x	x
1120	Ivy Green	x	x	x
1122	Cherry Red	x	x	x
1123	Pearl Gray	x	x	x
1124	Citron Green	x	x	x
1125	Coronation Blue	x	x	x
1126	Orange	x	x	x
1127	Crimson	x	x	x
1128	Emerald Green	x	x	x
1129	Coral	x	x	x
1130	Pigskin	x	x	x
1131	Marine Blue	x	x	x

SEALEX BATTLESHIP LINOLEUM

(See page 5 for color card)

Pattern No.	Color	6.00 mm. Gauge 6.00 mm. (.230-.240 inch)	3/16" Gauge 4.76 mm. (.183-.193 inch)	1/8" Gauge 3.18 mm. (.120-.130 inch)
1000	Craft Brown	x	x	x
1001	Moss Green	Not made	x	x
1002	Terra Cotta	Not made	x	x
1003	Slate Gray	Not made	x	x
1004	Mahogany	Not made	x	x
1005	Black	Not made	x	x

SEALEX JASPÉ LINOLEUM

(See page 5 for color card)

Pattern No.	Color	3/16" Gauge 4.76 mm. (.183-.193 inch)	1/8" Gauge 3.18 mm. (.120-.130 inch)	Medium Gauge 2.40 mm. (.095 inch)
1251	Taupe	x	x	x
1252	Dark Gray	x	x	x
1253	Tan	x	x	x
1254	Brown	x	x	x
1255	Light Gray	x	x	x
1256	Dark Green	x	x	x
1258	Rose Glow	Not made	x	x

The Guaranty Bond

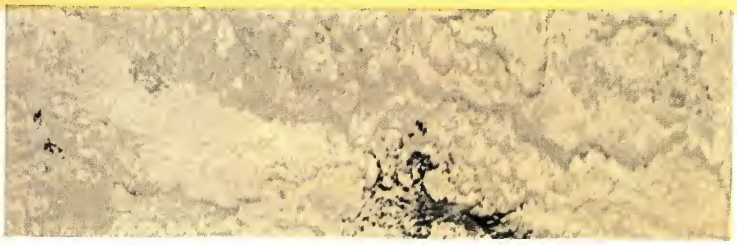
BONDED FLOORS AND WALLS

When Sealex Linoleum or Sealex Wall Linoleum is installed by an authorized contractor of Bonded Floors or Bonded Walls, the full value of workmanship and materials is backed by a Guaranty Bond. What better assurance of complete satisfaction could there be to architect, contractor and client? Certainly, such a guarantee can be offered only by a thoroughly responsible concern . . . one sure of its materials and installation methods.

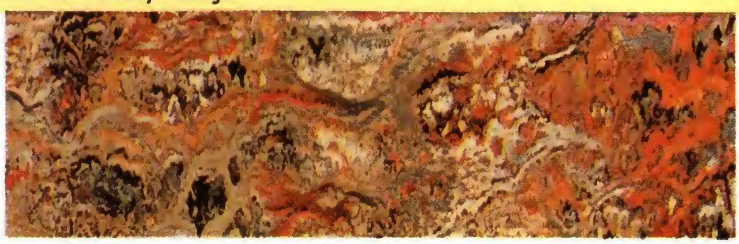
CONGOLEUM-NAIRN INC.

★ SEALEX VELTONE LINOLEUM ★

Pattern Numbers Given Are for 1/8" Heavy Gauge



"RUTLAND" No. 2980



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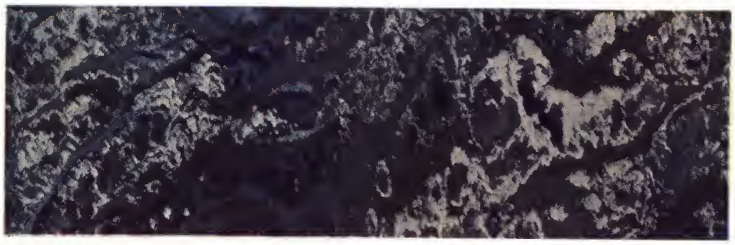
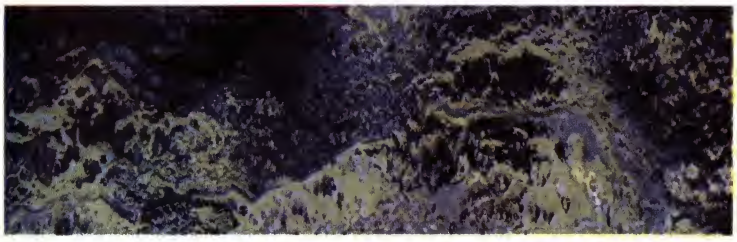
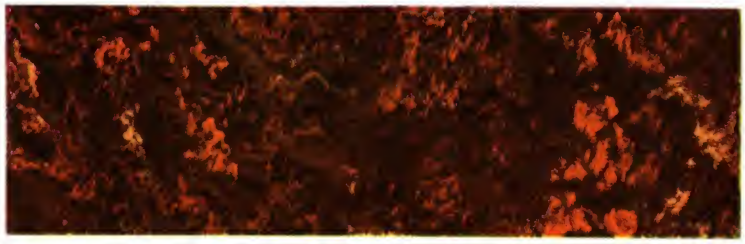


"DELFT BLUE" No. 2977

"BERKSHIRE" No. 2915



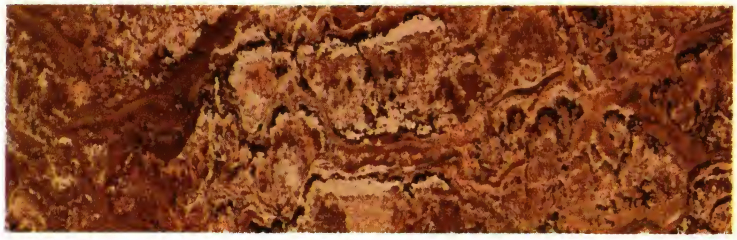
"GROTTO" No. 2909



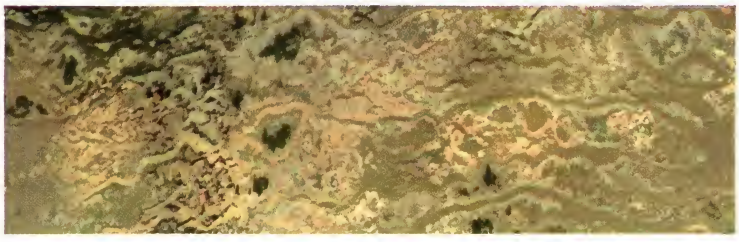
"MAHOGANY RED" No. 2976

"TANGIER" No. 2983

"TIZZARO" No. 2919



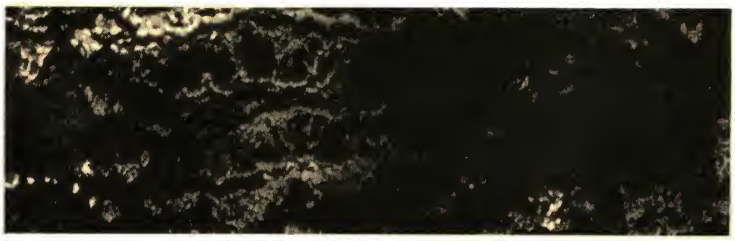
"CIRCASSIAN" No. 2968



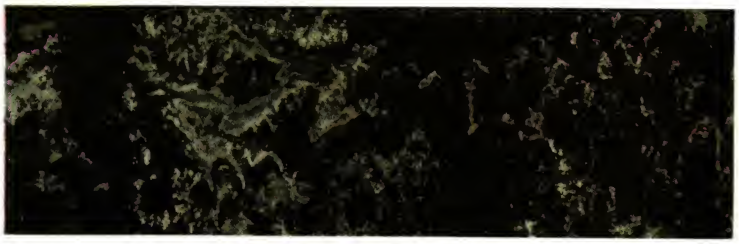
"MARSH GREEN" No. 2941

"PAISLEYGRAY" No. 2974

"EVERGREEN" No. 2972

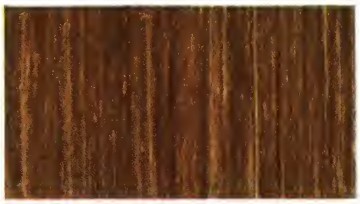


"VULCAN" No. 2959



"VERDE ANTIQUE" No. 2989

★ SEALEX JASPÉ LINOLEUM ★


"Brown" No. 1254

"Dark Gray" No. 1252

"Tan" No. 1253

"Light Gray" No. 1255

"Taupe" No. 1251

"Dark Green" No. 1256

"Rose Glow" No. 1258

★ SEALEX BATTLESHIP AND PLAIN LINOLEUM ★

"Ivory White"
No. 1113

"Yellow"
No. 1110

"Pigskin"
No. 1130

"Craft Brown"
Nos. 1000 and 1100

"Coffee Brown"
No. 1118

"Mahogany"
Nos. 1004 and 1104

"Citron Green"
No. 1124

"Jade Green"
No. 1119

"Emerald Green"
No. 1128

"Ivy Green"
No. 1120

"Moss Green"
Nos. 1001 and 1101

"Olympic Blue"
No. 1116

"Pearl Gray"
No. 1123

"Slate Gray"
Nos. 1003 and 1103

"Black"
Nos. 1005 and 1105

"Coronation Blue"
No. 1125

"Marine Blue"
No. 1131

"Pacific Blue"
No. 1114

"Coral"
No. 1129

"Orange"
No. 1126

"Crimson"
No. 1127

"Cherry Red"
No. 1122

"Terra Cotta"
Nos. 1002 and 1102

NOW!

Personal-ized Floors
Reg U. S. Pat. Off.

To the architect interested in creating original floor effects, Congoleum-Nairn offers a new service, *Personal-ized Floors.* The wide range of Sealex Insets, Feature Strips, and Borders available at very modest prices enables the architect to achieve highly specialized floor treatments within the most conservative budget limits.

MERCHANDISING FOR THE ARCHITECT

In recent months we have arranged extensive showings of Personal-ized Floors in leading department stores throughout the country. There's been a tremendously enthusiastic attendance by home owners and prospective home owners. The education of these people in the possibilities of modern home design is a real merchandising service for the architect.

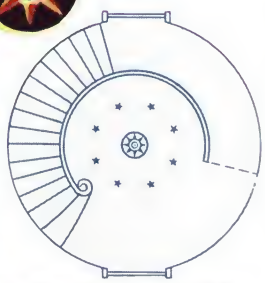
"Compass and Wheel"—No. P21 (18-inch)
Also 3 alternate color schemes.

"Tea Set"—No. P19 (18-inch)
Also 3 alternate color schemes

SEND FOR THIS CATALOGUE. The new Resilient Floors book contains a complete catalogue of the Personal-ized Floors Insets, Feature Strips, and Borders. A copy will be furnished you on request.

See how this Personal-ized Floor design cleverly accentuates the shape of the hall. 8 Ivory Sealex Stars circle the Sealex "Compass and Wheel" Inset in the center of the Adhesive Sealex Floor. The pattern is "Nite," No. A7388. (Like all Sealex Linoleums, the surface is smooth, stain-proof and very easy to clean.)

Black and white 9-inch "Scottie Dog" Sealex Insets and Ready-Made Border Personal-ize this floor.

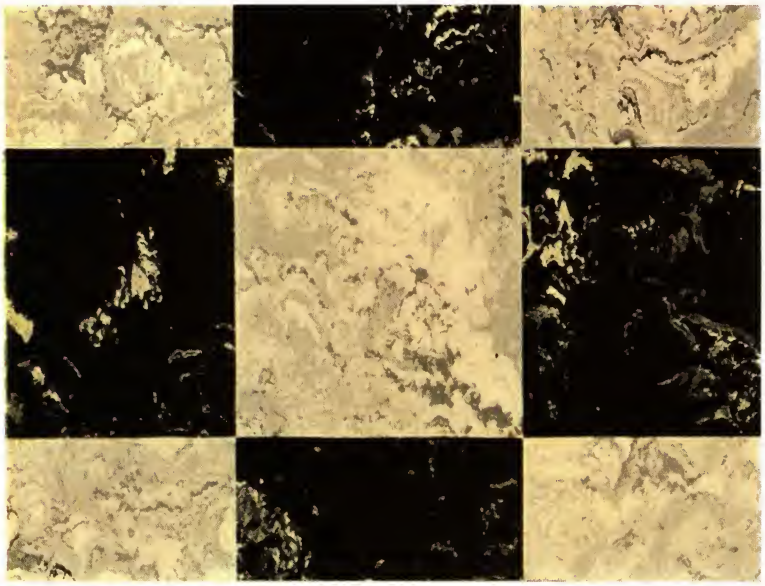


★ SEALEX INLAID LINOLEUM ★

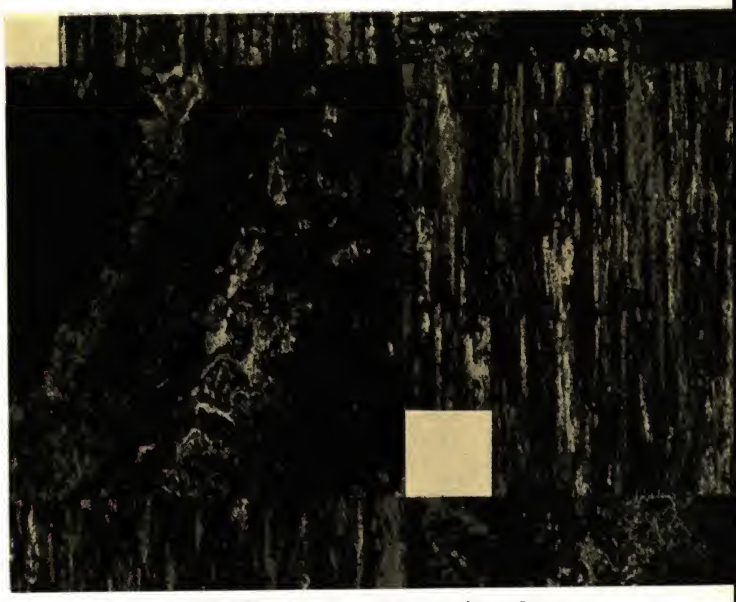
The new Resilient Floors Catalogue shows the wide range of designs and colorings available. A copy will be furnished you on request.

"ELDORADO" No. 3222—Heavy Gauge

"LORRAINE" No. 3266—Heavy Gauge

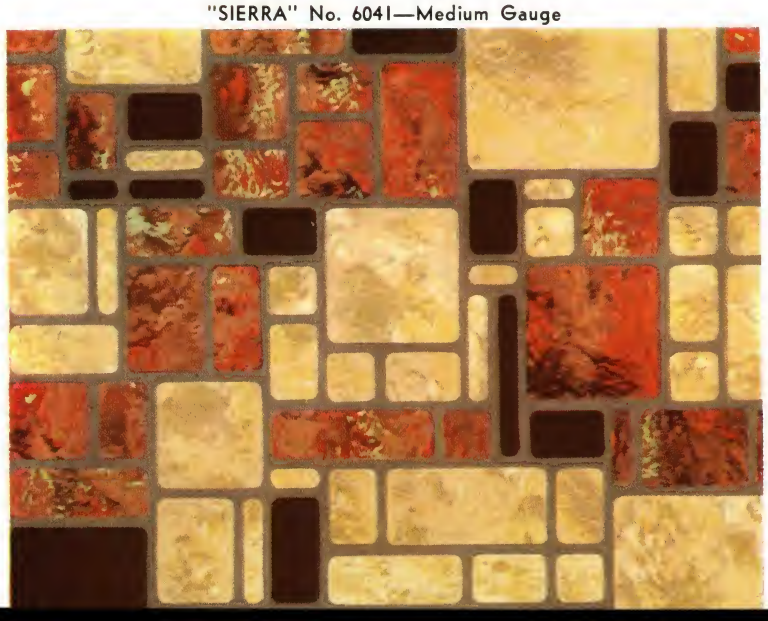


"FOYER" No. 3104—Heavy Gauge

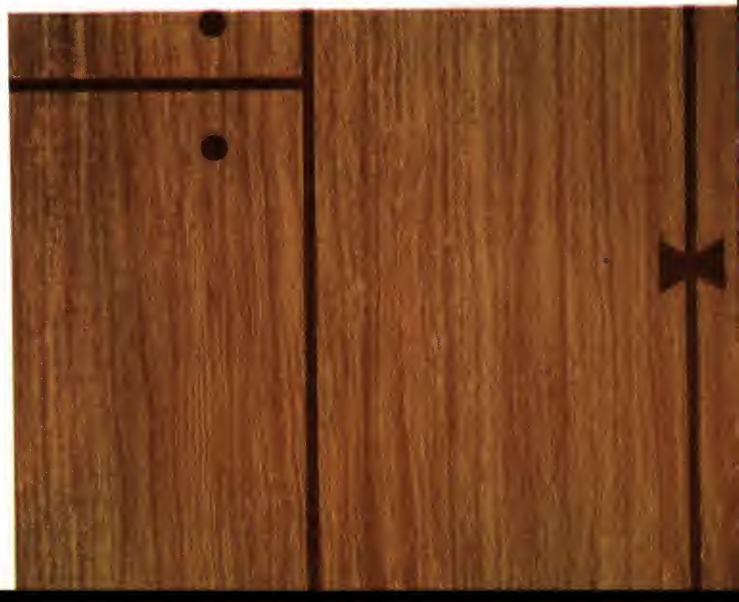


"NIGERIAN" No. 6060—Medium Gauge

"SIERRA" No. 6041—Medium Gauge



"REVERE" No. 6015—Medium Gauge



CONGOLEUM-NAIRN INC.

★ ADHESIVE SEALEX LINOLEUM ★

This modern development in the inlaid linoleum field has a new and specially prepared, factory-applied adhesive on the back. Installed according to the specifications below, every square inch of Adhesive Sealex Linoleum grips the floor like a vise, insuring a permanent job.

Because this revolutionary new floor-covering insures the strongest and most permanent installation, we recommend the application of Adhesive Sealex Linoleum directly to either wood or concrete floors (above grade) without the use of lining felt. It also eliminates the use of messy paste pails and the heavy roller. Much time and expense are thus saved. It should be remembered, however, that regardless of installation method used, no linoleum floor can be smoother than the underfloor to which it conforms.

Its mechanical advantages are only a part of the interesting story of the new Adhesive Sealex Linoleum. Design and color experts have kept pace by introducing sparkling correlated colors into choice patterns appropriate to this marked advancement in the inlaid linoleum industry.

Architects will be especially pleased with the decorative flexibility, sanitary, easy to clean, time and money saving features which ideally adapt Adhesive Sealex Linoleum to residential construction or re-modeling projects. Sold by dealers in cities and town throughout the United States, its introduction has increased the use of inlaid linoleum by thousands of satisfied consumers everywhere.

Specifications for Laying

The linoleum contractor shall furnish and install the materials hereinafter specified on all sub-floor areas as follows:

1. Materials: (a) *Linoleum:* The Linoleum used to be Congoleum-Nairn Adhesive Sealex Linoleum, ... Gauge, Pattern No. ....., and must bear the manufacturer's name and grade of the linoleum. The materials shall be subjected to a temperature of not less than 70° F. for at least 24 hours before installation.

2. Underfloors: (a) *Wood:* The wood base shall be a double floor. The top boards shall be thoroughly dry and well-seasoned tongue and grooved lumber not more than 4″ wide, nor less than ⅞″ thick, preferably laid diagonally and toe-nailed tightly together. On old work, all loose boards shall be renailed and broken boards replaced. On both old and new work, all unevenness of the floor shall be planed or sanded smooth.

(b) *Concrete:* The floor must be dry and all cracks and breaks filled in with plaster of Paris or other plastic in order to smooth out all inequalities. All dust and foreign particles must be swept up before the linoleum is laid.

3. Application of Materials: On the sub-floor thus prepared, install Adhesive Sealex Linoleum direct to the underfloor. The widths of the linoleum should be laid crosswise to the floor boards. Where this cannot be done, the linoleum should be laid so that the seams do not coincide with cracks in the underfloor. The successive widths should be fitted and applied one at a time until the room is covered.

After each width is cut to fit, half of the width is turned back and the adhesive activated with a soft bristle brush and warm water. Care should be taken to be sure that all of the adhesive is uniformly and completely activated.

The activated half of the width is then turned back into place on the floor and pressed down all over with foot pressure. The remaining half of the width is then turned back and similarly activated and applied.

Successive widths should be installed so that the pattern matches and slightly overlaps, to permit the proper cutting of seams, using the upper width as a guide for cutting the under width. After the seam is thus cut and trimming removed, the activating and installing process is carried out as with the first width. Proceed with successive widths in the same manner.

4. Cleaning and Care of Linoleum: Immediately after completion of installation, clean the surface of the linoleum with a damp cloth, allow floor to dry thoroughly and apply one or two coats of Sealex Self-Polishing Wax.

5. Brief Specifications: On all underfloors as indicated on plans and/or as called for in the specifications, apply Adhesive Sealex Linoleum, ... Gauge, Pattern No. ....., in accordance with the manufacturer's specifications. The use of merchandise known as remnants will not be allowed. The underfloor shall be smooth and free from inequalities, and Adhesive Sealex Linoleum applied in accordance with the manufacturer's approved method of application.

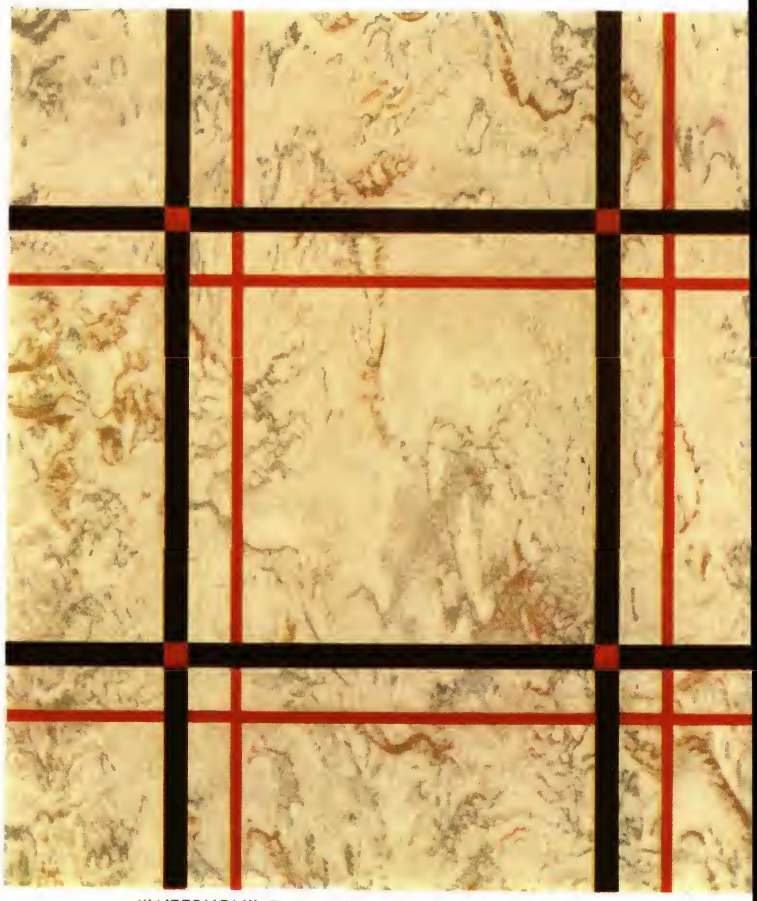
Activating the adhesive. Read instructions above.

Trimming the seam. Read instructions above.

★ ADHESIVE SEALEX LINOLEUM ★

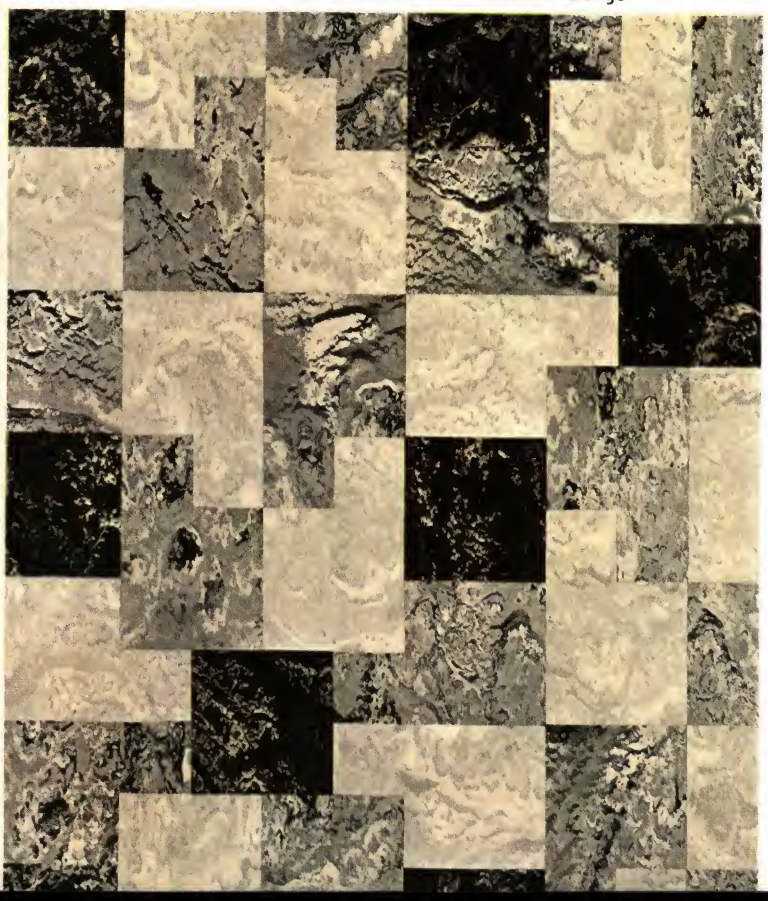
The new Resilient Floors Catalogue shows the wide range of designs and colorings available. A copy will be furnished you on request.

"MATADOR" Pattern No. A7472—Standard Gauge



"WEEBURN" Pattern No. A7487—Standard Gauge

"PALERMO" Pattern No. A7432—Standard Gauge



"TOREADOR" Pattern No. A7470—Standard Gauge

CONGOLEUM-NAIRN INC.

★ SEALEX TREADLITE TILE ★

DESCRIPTION Where decorative floors expressing the individuality of the client are desired, plain and marbleized Sealex Treadlite Tile is a ready answer to the architect's problem.

These tiles are obtainable in eleven plain colors and ten marbleized effects. See the following page for color card.

Sealex Treadlite Tile offers numerous decorative possibilities through the combination of two or more colors in tiles of various sizes and shapes.

USES In addition to its decorative features, Sealex Treadlite Tile is durable, resilient, easy to clean and economical to maintain. It is, therefore, suitable for use in such areas as:

Corridors	Assembly Halls
Court Rooms	Public Buildings
Aisles	Private Offices
Sales Rooms	Clubs

WEIGHT AND SIZES Sealex Treadlite Tile is manufactured in one weight or thickness, namely $\frac{3}{16}$ in.

It is made in these standard sizes:

4x 4 in.	4x 8 in.	¼x 4 in.
6x 9 in.	6x12 in.	¼x 6 in.
9x 9 in.	9x18 in.	¼x 9 in.
12x12 in.	12x24 in.	¼x12 in.
18x36 in.	36x36 in.	¼x36 in.
1x36 in.	1½x36 in.	2x36 in.

Special sizes for the assembling of special designs will be quoted upon request.

HOW INSTALLED Sealex Treadlite Tile is installed by authorized contractors of Bonded Floors, in accordance with the manufacturer's specifications. It is adaptable for use over concrete underfloors. The reverse side of each tile is finished with a special surface, assuring a permanent bond with the underfloor when laid with Sealex Adhesive.

GUARANTY BOND When installed over concrete by authorized contractors of Bonded Floors, Sealex Treadlite Tile carries a Guaranty Bond issued by United States Fidelity & Guaranty Company—guaranteeing workmanship and material for a period of five years.

Below: Floor of Sealex Treadlite Tile which completely harmonizes in design and color with the interior photographed. Decoratively correct, these floors are entirely businesslike in performance, too. Treadlite Tile is a favorite choice of business organizations which make their selection only after thorough tests to determine what flooring gives most for the floor-covering dollar.

★

COMPLETE CATALOGUE

Congoleum-Nairn Inc. has an architectural catalogue covering the entire subject of Resilient Floors of the cork composition type. If you do not have this in your 23-J-AIA File we will be glad to furnish a copy on request.

Sealex Treadlite Tile is obtainable in these Plain Colors

Colonial Buff
No. 1056

Mahogany Brown
No. 1004

Craft Brown
No. 1000

Ivory White
No. 1057

Moss Green
No. 1001

Pacific Blue
No. 1036

Fawn Gray
No. 1050

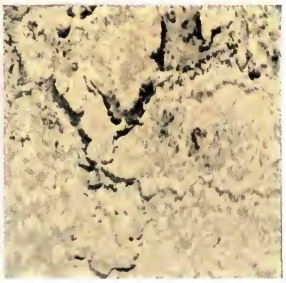
Slate Gray
No. 1003

Terra Cotta
No. 1002

Stone Gray
No. 1015

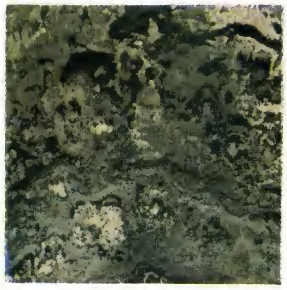
Black
No. 1005

Sealex Treadlite Tile is obtainable in these Marbleized Effects

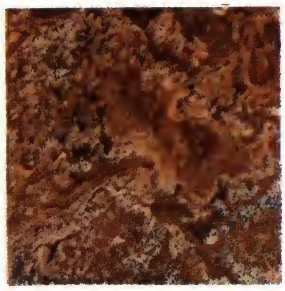


White Mottled Black
No. 1180

Black Mottled White
No. 1159

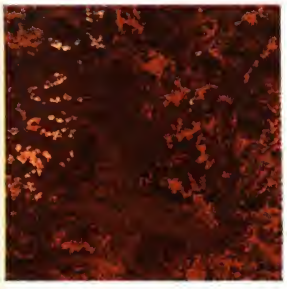


Marshgreen
No. 1141



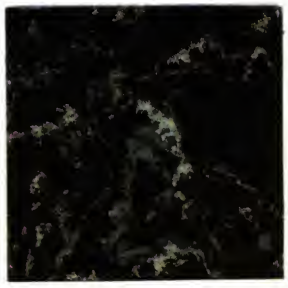
Dark Sienna
No. 1168

Green Mottled Red & Black
No. 1170



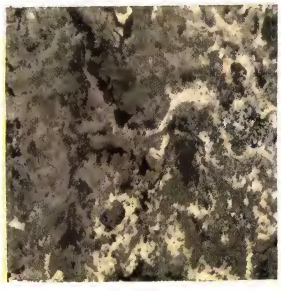
Mahogany Red
No. 1176

Light Sienna
No. 1178



Verde Antique
No. 1189

Evergreen
No. 1172



Paisleygray
No. 1174

CONGOLEUM-NAIRN INC.

★ SEALEX WALL LINOLEUM ★

A Permanent Decorative Material

Sealex Wall Linoleum is a linoleum-type composition, ideal for any interior in which high decorative values, durability and economical ease of maintenance are prime requisites in the treatment of the walls.

Quickly cemented into place, Sealex Wall Linoleum is as admirably suited to modernization work as it is to new construction. It is especially recommended for (1) Residences, Apartments; (2) Hospitals, Institutions; (3) Schools, Colleges; (4) Offices, Public Buildings, Banks; (5) Retail Stores, Specialty Shops, Showrooms; (6) Restaurants, Taverns and Clubs.

Beauty and Decorative Properties — The architect will appreciate the superlative beauty of Sealex Wall Linoleum. Its range of colors blend with any type of decorative scheme and enhance the general effect. Strips of contrasting colors may be installed in decorative bands, or insets may be cut in any design to create the most individual effects.

Flexibility — The flexibility of Sealex Wall Linoleum enables it to take ordinary expansion and contraction with no damage whatsoever. This material will follow curves in the wall and can be bent around columns, pilasters and rounded exterior corners without difficulty.

Cleanliness, Ease of Maintenance, Durability and Economy —Sealex Wall Linoleum, like Sealex Linoleum, is unusually sanitary because its easily washable surface is impervious to the entrance of dirt. It is water and stain-resistant and its colors cannot wear off because they extend throughout the composition. During its entire long term of service Sealex Wall Linoleum therefore never needs to be repainted or refinished. Over a period of years, Sealex proves itself the lowest-priced *permanent* wall-covering.

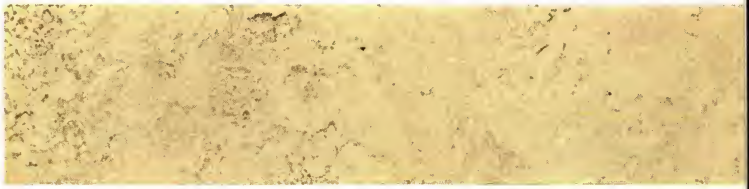
★

Sealex Linoleum on both floors and walls makes this kitchen at once modern and practical. The walls are Sealex Wall Linoleum, "Marble White," No. 7977. Baseboard is "Black," No. 1105. Field pattern of Personal-ized Floor is "Corinth," No. A7231. Sealex "Disc" and "Leaf" Insets and ready-cut Feature Strips in accenting correlated colors. Drainboards are covered with "Orange" Sealex Linoleum, No. 1126.

ON THE COVER *is a modern bathroom with smooth, sanitary, water-proof floors and walls of Sealex Linoleum. Main Walls are Sealex Wall Linoleum, "Parchment," No. 7973. Tub recess is "Black Onyx," No. 7959. Ceiling molding and floor are "Coral" Sealex Linoleum, No. 1129. Floor is personal-ized with "Nest of Squares" Inset and Black and White "Squares."*

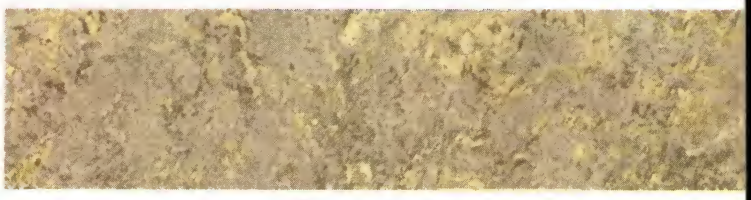
★ SEALEX WALL LINOLEUM ★

"Parchment"—No. 7973

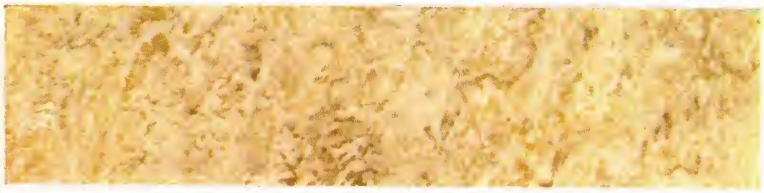


"Marble White"—No. 7977

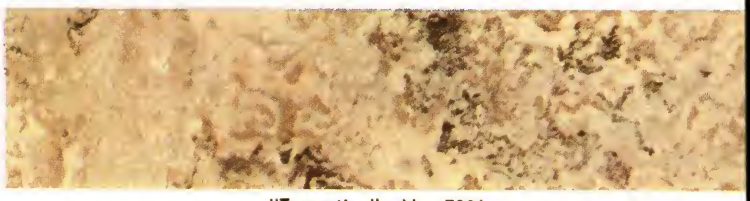
"Sardonyx"—No. 7963



"Zircon"—No. 7972



"Maize"—No. 7987

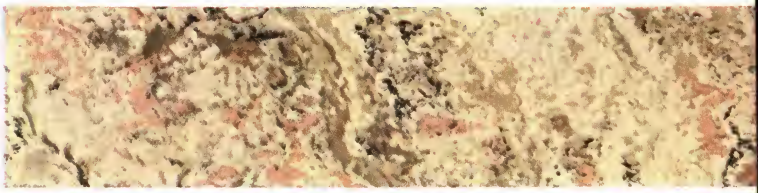


"Travertine"—No. 7986

"Coral"—No. 7975

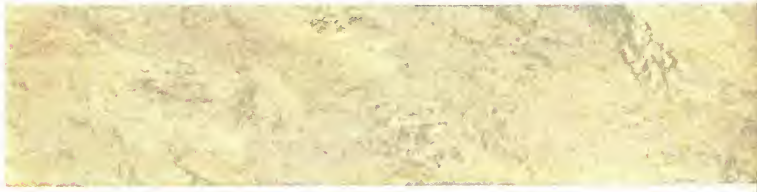
"Carnelian"—No. 7958

"Rose Agate"—No. 7989

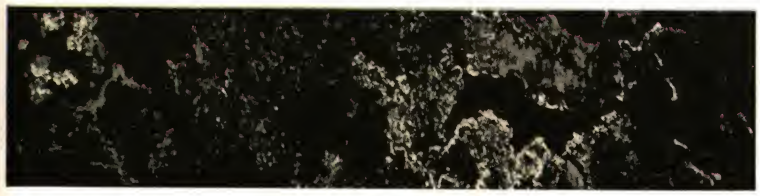


"Sunstone"—No. 7960

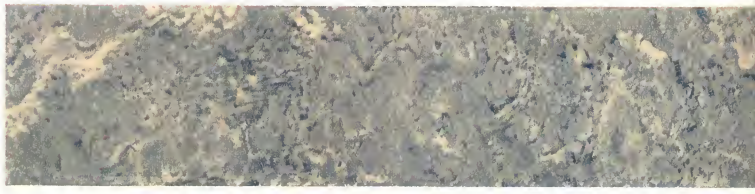
"Green Onyx"—No. 7985



"Green Beryl"—No. 7971



"Black Onyx"—No. 7959



"Azure"—No. 7988

"Light Pine"—No. 7981

"American Walnut"—No. 7982

"Dark Walnut"—No. 7984

★ SPECIFICATIONS...SEALEX WALL LINOLEUM ★

On all walls as indicated on the plans and/or as called for in the specifications, supply and install Sealex Wall Linoleum as follows:

Materials: *Wall-Covering:* The wall-covering shall be Congoleum-Nairn's Sealex Wall Linoleum, pattern No.....

Adhesive: The adhesive for bonding wall-covering to under-walls shall be Congoleum-Nairn's Sealex Wall Linoleum Adhesive.

Treatment of wall-covering at corners: Interior corners shall be (square, brought to a true plumb,—or—rounded to a radius of 5/8"); exterior corners shall be (square, brought to a true plumb,—or—rounded to a radius of 5/8"); as shown on the plans and/or in the specifications. Note—see reference under erection of plaster walls.

Allowance for thickness of wall-covering: An allowance of approximately 1/8", for the thickness of the wall-covering, shall be made at all abutments, such as door jambs, window frames, baseboards, bathroom wall fixtures, etc.

Cleaning: Upon completion of installation, the surface of the wall-covering shall be thoroughly cleaned with lukewarm water and mild soap. Any adhesive coming in contact with the face of the wall-covering shall be removed according to manufacturer's specifications.

General Conditions: No Sealex Wall Linoleum shall be applied in a room where the temperature is under 68 degrees F. Sealex Wall Linoleum shall not be applied to walls the exterior face of which is in contact with the ground, unless such walls shall have been membrane-water-proofed and furred out and shall test dry in accordance with specifications of the manufacturer of the wall-covering.

Workmanship: Sealex Wall Linoleum shall be applied by a selected Congoleum-Nairn dealer and in accordance with manufacturer's specifications.

Brief Specification: On all plaster walls as indicated on plans and/or as called for in the specifications, apply Sealex Wall Linoleum, pattern No. .....
The wall-covering shall be installed in accordance with the manufacturer's specifications for this type of work.

New Walls

Plaster—*Erection of Walls:* Walls to receive Sealex Wall Linoleum as indicated on the plans and/or as called for in the specifications, shall be of good quality plaster with white coat finish, erected in such manner that when dry they shall be firm, hard and smooth.

Rough spots and trowel marks shall be sanded smooth with coarse sandpaper. Cracks or indentations shall be filled with Savogran Type A Cement, or equal, sanded to a smooth surface when dry.

Interior corners shall be (square, brought to a true plumb—or—rounded to a radius of 5/8"). Exterior corners shall be (square, brought to a true plumb—or—rounded to a radius of 5/8"). Explanatory note—in the case of interior corners it is not necessary to erect rounded plaster corners as the wall-covering itself will form the desired cove; provision for rounded exterior corners must be made in the plaster.

Before the application of Sealex Wall Linoleum, plaster walls shall test dry in accordance with Congoleum-Nairn's specifications for testing for moisture. Where called for, walls shall be primed with Sealex Wall Primer as specified by Congoleum-Nairn Inc. Testing of walls for dryness and the priming, if any, are to be performed by the wall linoleum contractor.

Brown coat and special patent plasters: If cement is added to the brown coat mix and if the surface is steel troweled to a smooth finish, the brown coat may be used as an under-wall for Sealex Wall Linoleum. Patent plasters properly troweled are also suitable.

Old Walls

Preparation of Walls: Loose scaly paint, cold water paint or wall paper shall be removed. All grease and dirt shall be removed by washing with a washing soda or Oakite; rinse thoroughly with clear water and wipe dry.

Gloss-painted or enamel-painted surfaces shall be sanded with coarse sandpaper to afford satisfactory bond.

Broken plaster, holes, cracks or other small openings shall be patched with a non-shrinking plaster compound. Such patched areas shall be sanded to a smooth surface.

Guarantee

Guaranty Bond: A Guaranty Bond covering both workmanship and material for a term of one year is obtainable on Sealex Wall Linoleum when installed by a Bonded Walls Distributor.

ATTENTION SWEET'S USERS

★ Congoleum-Nairn Inc. have prepared a complete Architect's Brochure on the subject of Sealex Wall Linoleum. If your files do not include this Book, ask us for your copy.

The linoleum contractor shall furnish and install the materials hereinafter specified on all subfloor areas as follows:

1. MATERIALS A. Linoleum: The linoleum used to be Sealex Linoleum ....., thickness....., Pattern No....., and shall be delivered on the job in full rolls, and shall conform to Federal Specifications LLL-L-351 or LLL-L-361. Every roll must be marked with the maker's name and grade of the linoleum. This material shall be subjected to a continuous temperature of 70° F. for at least 24 hours before installation.

B. Lining Felt: The felt shall be either unsaturated Congo lining felt, or asphalt saturated Congo lining felt. The unsaturated lining felt shall weigh approximately one pound per square yard. The saturated felt shall have a minimum weight of approximately one and one-half pounds per square yard.

C. Adhesive: The adhesive for adhering the lining felt to the wood floor as well as the linoleum to the lining felt shall be Sealex Green Label Paste as manufactured by Congoleum-Nairn Inc.

Wood Underfloors

SUBFLOOR CONDITION The suspended wood base (if new) shall be furnished and installed by another contractor. This wood base shall be a double floor brought up to a surface.....below the finished floor level, and the top boards shall be thoroughly dry and well-seasoned tongue and grooved lumber not more than 4 inches wide preferably laid diagonally and toe nailed.

On old suspended wood subfloors the loose, defective or badly worn boards shall be replaced and face nailed. Any unevenness in the boards shall be planed or sanded, smooth and even. This work shall be done by another contractor.

APPLICATION OF MATERIALS On the wood sub-base thus prepared there shall be installed Congo saturated felt or unsaturated felt, which shall be securely adhered to the base with Green Label linoleum paste. It is preferable to lay the lining felt so that the length of the material will run across the boards. The felt is to be laid with carefully butted joints —all cross joints to be staggered. The felt shall be carefully cut to fit all vertical surfaces and shall be applied to the floor with Green Label linoleum paste. The felt shall be thoroughly rolled into the adhesive with a linoleum roller weighing 150 pounds.

Over the felt lining thus completed apply Sealex Linoleum which shall be cut to cover the area with the fewest possible seams. In those cases where it is economical to lay the lengths of the linoleum parallel with the lengths of the felt, care should be taken to avoid having the seams of the linoleum fall directly over the seams of the felt.

At junctions with vertical surfaces the linoleum shall be carefully scribed so as to form a tight joint at these points. Allowance shall be made for ½ inch to ¾ inch lap at seams for double cutting (see below for pattern goods).

The entire body of the linoleum shall then be secured to the felt, using Green Label linoleum paste and shall immediately be rolled from the center out with the linoleum roller to assure complete adhesion and to remove all air bubbles.

After the body of the linoleum has thus been adhered to the subfloor with the seams properly lapped, the seams shall be cut through the two thicknesses. The edges of the linoleum shall then be embedded into the adhesive and thoroughly rolled to assure a tight even workmanlike seam. All seams and edges shall be thoroughly weighted down with sand bags to secure proper adhesion.

Where cross seams in linoleum are necessary, the linoleum should be lapped after pasting to within approximately six inches of where the seam is to be made. After the pasted area has been thoroughly rolled, the linoleum should be left in this lapped condition for at least one hour to permit any shrinkage likely to occur. Paste should then be applied under the lap and the linoleum cut, using a straight edge, through both thicknesses. In pasting and removing the excess linoleum, any tendency toward excessive bending of the linoleum should be avoided.

Concrete Underfloors

SUBFLOOR CONDITION The concrete subfloor shall be furnished to the linoleum contractor broom clean and satisfactorily dry. The surface shall be a smooth, even troweled cement finish. Where expansion joints are present, the joints shall be filled in by the linoleum contractor with plaster of Paris or other suitable material so that no marks will show through the surface of the linoleum. Installation should not proceed until an adequate test is made to assure that the floors are free from moisture.

APPLICATION OF MATERIALS On the subfloor thus prepared the linoleum shall be cut to fit the room accurately and neatly and shall be laid so as to have a minimum of seams. At junctions with vertical surfaces linoleum shall be carefully scribed so as to form a tight joint at these points. Allowances shall be made for from ½ inch to ¾ inch lap at all seams for double cutting where Battleship, Plains, Jaspés and Veltone patterns are used. The entire body of the linoleum shall then be secured to the concrete subfloor using Green Label paste, and shall immediately be rolled from the center out, with a linoleum roller, weighing 150 pounds, to assure complete adhesion and to remove all air bubbles.

After the body of the linoleum has thus been adhered to the subfloor with the seams properly lapped, the seams shall be cut through the two thicknesses. The edges of the linoleum shall then be embedded into the adhesive and thoroughly rolled to assure a tight even workmanlike seam.

All seams and edges shall be thoroughly weighted down with sand bags to secure proper adhesion.

Where cross seams in linoleum are necessary, the linoleum should be lapped after pasting to within approximately six inches of where the seam is to be made. After the pasted area has been thoroughly rolled, the linoleum should be left in this lapped condition for at least one hour to permit any shrinkage likely to occur. Paste should then be applied under the lap and the linoleum cut, using a straight edge, through both thicknesses. In pasting and removing the excess linoleum, any tendency toward excessive bending of the linoleum should be avoided.

NOTE: Specifications for cutting seams where pattern goods are to be installed.

Method A. The seams shall be only slightly lapped (not more than 3/16 inch). The edge of the upper sheet shall be used as a guide for cutting the lower sheet in order to secure a tight and sightly seam.

Method B. (Alternate) The sheets of linoleum shall be butted together and continuous contact between adjacent sheets shall be secured by the removal of all high points along the butt edges of the linoleum with a block plane or other tool.

Either one of these two methods is necessary for the application of pattern goods in order that distortion of the pattern does not occur when the job is completed.

CLEANING OF LINOLEUM The linoleum contractor shall remove all paste spots with a damp cloth, leaving the floor broom clean and in good condition.

PROTECTION After the linoleum floors have been inspected and approved, the general contractor shall cover the linoleum with heavy paper in rooms where painting or other work is to be done as a protection until the building is ready for occupancy.

LIGHTING, HEATING, HOISTING AND POWER Without cost to the linoleum contractor the owner or general contractor shall maintain a temperature of at least 70° F. during the time the linoleum work is being done. He shall light the rooms sufficiently for efficient work; he shall furnish hoisting service; he shall furnish the necessary power to clean and polish the floor.

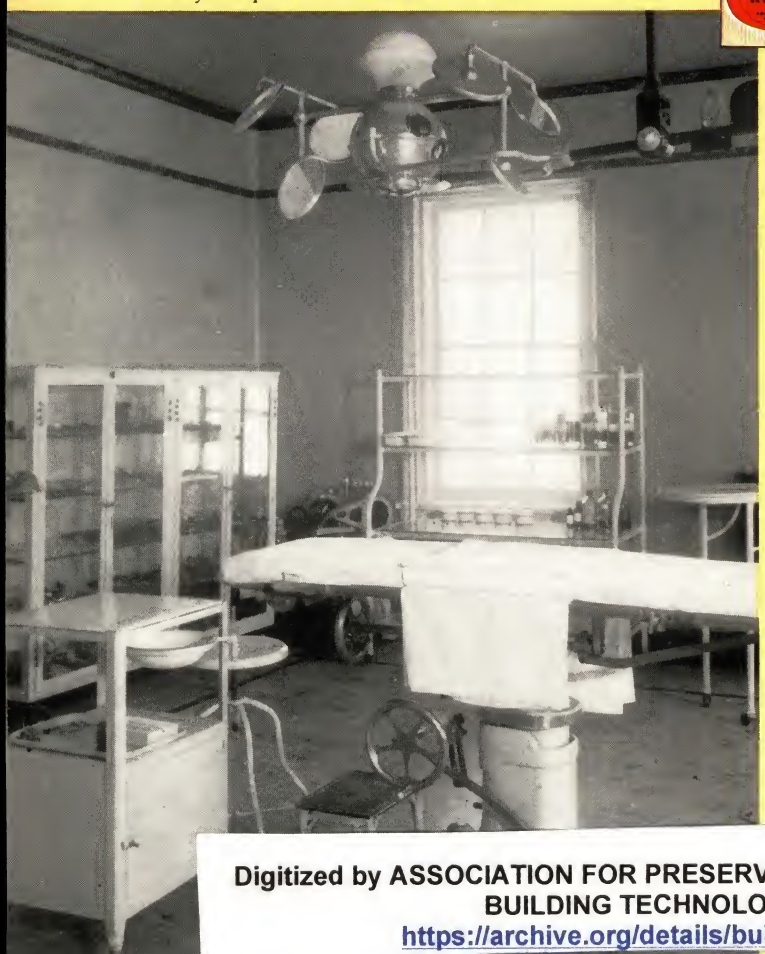
GUARANTEE The linoleum contractor shall guarantee the floor against all defects in material and workmanship for ..... years from date of the completion of the job.

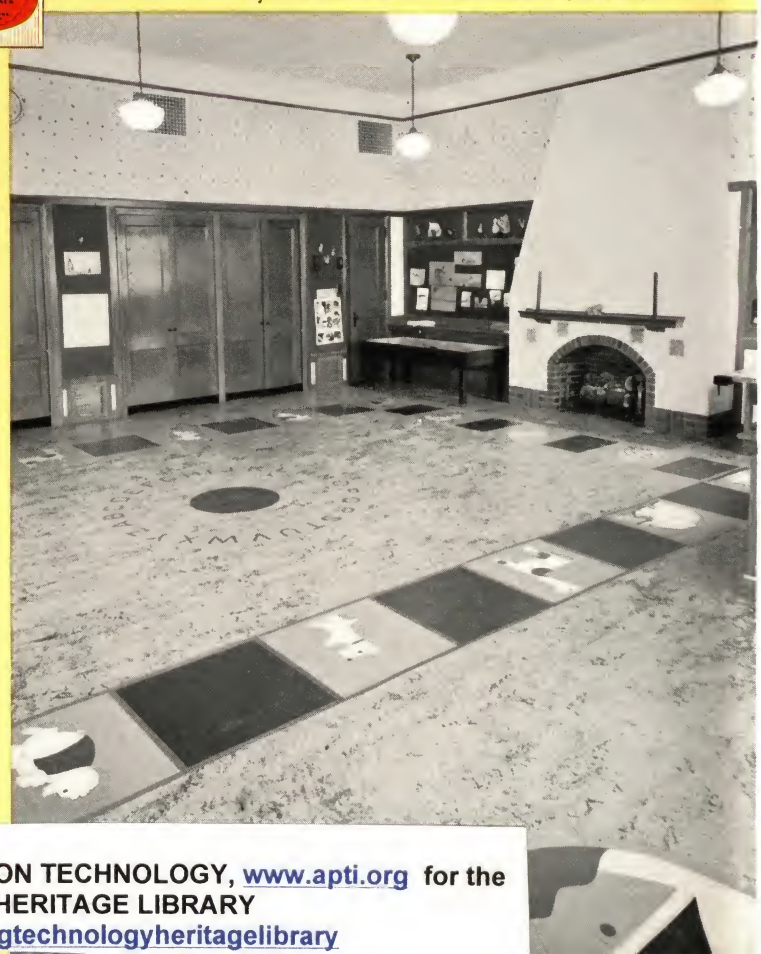
Modern, custom-cut floor of Sealex Plain Linoleums for a modern bar.

A simple but unusually effective floor treatment in Sealex Plain Linoleum.

Sealex Linoleum Floors and Walls with a sanitary one-piece cove base and border.

A remarkably attractive kindergarten floor of Sealex Veltone and Plain Linoleum.





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SECTION 11

CONTINUED ⟶

THE PARAFFINE COMPANIES, INC.

Manufacturers of Pabco Linoleum and Mastipave

GENERAL OFFICES
475 Brannan Street, SAN FRANCISCO, CALIF.

BRANCH OFFICES
LOS ANGELES, CALIF. SEATTLE, WASH. PORTLAND, ORE. CHICAGO, ILL. NEW YORK, N. Y. SOMERVILLE, N. J.

THE PABCO FLOOR COVERING LINE

Pabco Battleship, Plain, Jaspe, Onyxtone and Inlaid Linoleums

Cork Carpet, Mastipave and Mastipave Tile

PABCO LINOLEUM

The Modern Floor—That term sums up the many advantages of Pabco Linoleum. A material whose beauty and flexibility of use make it adaptable to any type of building and decorative scheme. Presented in colors and designs that run through to the burlap back, hence retain their freshness for years after installation. More than that, linoleum is resilient, therefore quiet, easy on the feet, resistant to cracking and chipping. Finally, it is sanitary, easy to keep clean, economical. The modern floor for modern uses.

Pabco Quality—Here Pabco rests its case on performance and exhaustive tests. Confirmed by this quotation from a recent report of Smith, Emery & Company, inspecting and testing engineers ". . . The tests show that Pabco (linoleum) passes all requirements prescribed by the proposed revision of Federal Specification LLL-L-351a, and is unsurpassed by any of the (other three) makes tested."

The Pabco Line—Comprises a beautiful array of battleship, plain and jaspe linoleums; cork carpet, Onyxtone all-over marble linoleums, plus inlaid linoleums in both cross-directional marbles and patterned effects. The line allows the architect the widest possible latitude in the use of design and color. Combinations of Pabco colors and patterns may be worked into distinctive, original and appropriate custom-designed floors. Or a most attractive floor may be obtained merely by the use of a Pabco pattern laid without border, feature strip or inset.

A Few Pabco Linoleum Installations

Alameda County Courthouse, Oakland, Calif.
Borden Dairy Stores
California Deaf and Dumb School, Berkeley, Calif.
Federal Community Housing Project, Indianapolis, Ind.
Federal Land Bank Building, Wichita, Kan.
Federal Office Building, Milwaukee, Wis.
Federal Office Building, Omaha, Neb.
Federal Trumbull Park Homes Project, Chicago, Ill.
Flathead County High School, Kalispell, Mont.
Harwood M. E. Girls School, Albuquerque, N. M.
Iowa State University, Iowa City, Iowa.
Junior and Senior High School, Waukegan, Ill.
Longview High School, Longview, Tex.
Los Angeles School System, Los Angeles, Calif.
Lurie Office Building, San Francisco, Calif.
Maricopa County Welfare Sanitarium, Phoenix, Ariz.
Owl Drug Stores
Pacific Telephone & Telegraph Co. Buildings
Queens County Hospital, New York, N. Y.
San Francisco City and County Hospital, San Francisco, Calif.
Senior High School, Rock Island, Ill.
Stanford University, Palo Alto, Calif.
University of California Hospital, San Francisco, Calif.
University of Illinois Medical and Dental Bldg., Chicago, Ill.
U. S. Airport, Shreveport, La.
U. S. Archives Bldg., Washington, D. C.
U. S. Army Barracks and Hospital, Fort Sill, Okla.
U. S. Forestry Bldg., Ogden, Utah
U. S. Marine Hospital, Memphis, Tenn.
U. S. Post Office, Minneapolis, Minn.
U. S. Post Office, Portland, Ore.
U. S. S. San Francisco and U. S. Navy Yards
U. S. Veterans' Hospital, Aspinwall, Pa.
U. S. Veterans' Hospital, Cheyenne, Wyo.
U. S. Veterans' Hospital, Sheridan, Wyo.
U. S. Veterans' Hospital, Yountville, Calif.
War Memorial Building, San Francisco, Calif.
Washington State Hospitals

PABCO PLAIN AND BATTLESHIP LINOLEUMS

No. 136 Yellow
Made in 1/8" and Standard gauges

No. 110 Green Made in 3/16", 1/8", Medium Plain, Standard Plain gauges

No. 100 Brown
Made in 6MM, 3/16", 1/8", Medium Plain, Standard Plain gauges

No. 135 Orange
Made in 1/8" and Standard gauges

No. 106 Gray
Made in 3/16", 1/8", Medium Plain, Standard Plain gauges

No. 123 Red
Made in 1/8" and Standard gauges

The darker colors are recommended for office general floor areas, building hallways, stairs and other areas where utility is the prime requisite. The lighter tones, with their deep, clear, uniform colors, are unexcelled for the field, border, feature strip and insets of custom-designed floors.

Not illustrated are:

No. 130 White-white. Made in 1/8" and Standard Gauges.

No. 115 Black. Made in 3/16", 1/8", Medium and Standard Gauges.

No. 111 Jade Green
Made in 1/8" and Standard gauges

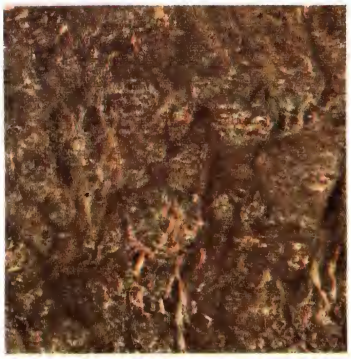
No. 122 Terra Cotta
Made in 3/16", 1/8" gauges

No. 125 Blue
Made in 1/8" and Standard gauges

PABCO ONYXTONE, ALL-OVER MARBLE LINOLEUM

First showing of this new addition to the Pabco Line. Architects have universally acclaimed the true marble rendition and character of Pabco's cross-directional, hand-processed linoleums. Many, however, have asked for this same marbleing in a linoleum without the block design of the cross-directional patterns.

Thus, Pabco now presents for the first time ONYXTONE . . . true all-over marble. It is especially recommended for large floor areas subjected to a constant flow of traffic because it hides footprints and traffic-soiling so readily. This line, too, may be used with splendid effects in a Pabco custom-designed floor.



No. 5001 Onyxtone
Made in Heavy Gauge

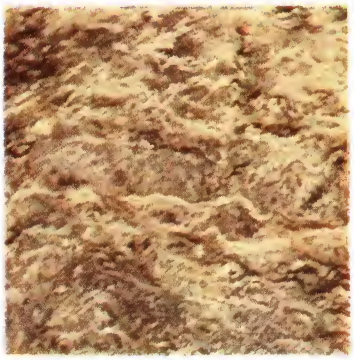
No. 5010 Onyxtone
Made in Heavy Gauge

No. 5011 Onyxtone
Made in Heavy Gauge

No. 5006 Onyxtone
Made in Heavy Gauge

No. 5003 Onyxtone
Made in Heavy Gauge

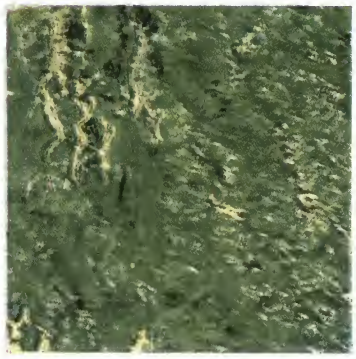
No. 5000 Onyxtone
Made in Heavy Gauge



No. 5009 Onyxtone
Made in Heavy Gauge

TRUE COLORS

In ONYXTONE, as in other Pabco Linoleums, the colors are clear and true. There is no discoloration or "yellowing." For example, Pabco White is the whitest white. That's due to Pabco's highly perfected curing process.



No. 5007 Onyxtone
Made in Heavy Gauge

LINOLEUM FLOORS—THE CORRECT START OF ANY ROOM DECORATIVE THEME

To architects the world over goes the lion's share of the acclaim for the increasing appreciation and use of linoleums as a decorative floor treatment in the home. More and more are designers, builders and home owners realizing that suitable linoleum floors provide a proper and most effective foundation for interior decoration.

In keeping with this trend, Pabco has developed its line to offer the architect a splendidly balanced group of colors and designs, from which he can create either a most elaborate or an extremely simple floor treatment, whichever is desired.

Basically, linoleum floors may be broken down into four types:

(1) plain linoleum, (2) Jaspe, (3) all-over marbles (ONYXTONE), (4) pattern inlaids. Their installation may be treated in any one of the following ways: (1) laid solid, wall to wall, (2) with contrasting or harmonizing border, (3) with a border and contrasting feature strip, (4) as a custom-built floor with border, feature strip and insets. Each of these steps from the basic wall to wall installation up to the custom-built floor progressively gives greater individuality and greater decoration. The installed cost varies by the amount of labor required rather than the amount of linoleum used.

Pabco Lino-Weave

A Pabco hand-processed inlaid linoleum available only in Medium Gauge. Its distinguishing characteristic is a unique and exclusive woven design effect that gives to the floor a distinctly "tailored" look.

All Pabco Linoleums Factory-Waxed

Through the use of special equipment, a fine, even film of wax is spread over all Pabco Linoleums, before crating, and is burnished and reburnished deeply into the pores. Thus, the merchandise is amply protected from accidental scratches during shipment and installation; has a thorough surfacing of wax which serves as a foundation for subsequent treatment after installation.

Pabco Custom-Designing Service

Pabco's Bureau of Design is at the service of architects who desire suggestions for special custom-designed linoleum floor effects.

Pabco Linoleum Gauges

6MM	.235″
$\frac{3}{16}$″	.187″
$\frac{1}{8}$″ Heavy Inlaid	.125″
Medium Inlaid	.095″
Standard Inlaid	.079″

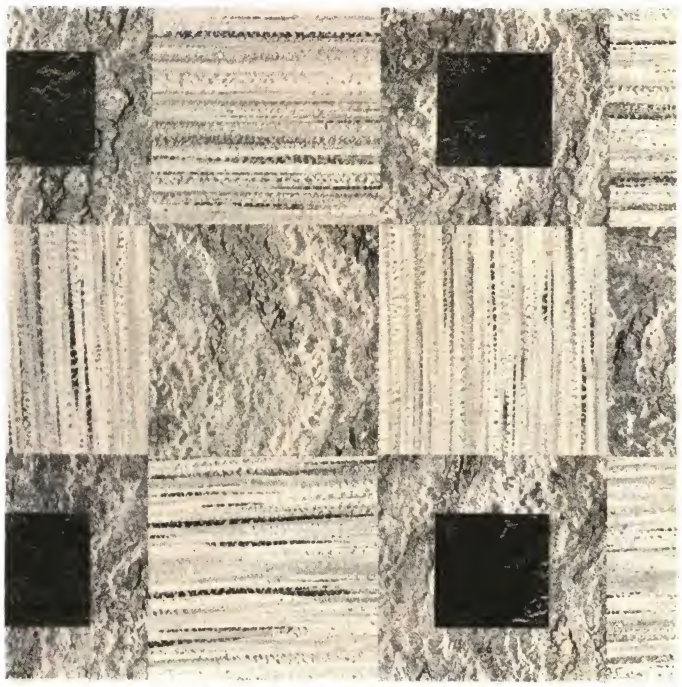
Pabco Hand-Processed Inlaid Linoleums

Available in Standard, Medium and Heavy Gauges, Pabco Inlaid Linoleum may be distinguished from the all-over marble ONYXTONE by the definite designs characterizing the former. In Pabco Inlaids, these pattern effects may be squares of contrasting colors and sizes, jig-saw effects, or cross-directional marble squares of the same marble graining. The major appeal of Pabco's hand-processed inlaids, however, lies in the careful selection made of individual units, all carefully matched together by hand. In the case of the cross-directional marbles, the squares are so placed that the graining is at right angles to the adjacent squares. The result is a floor of "custom-built" character—one with no apparent seams and that may later be altered in units without marring the appearance.

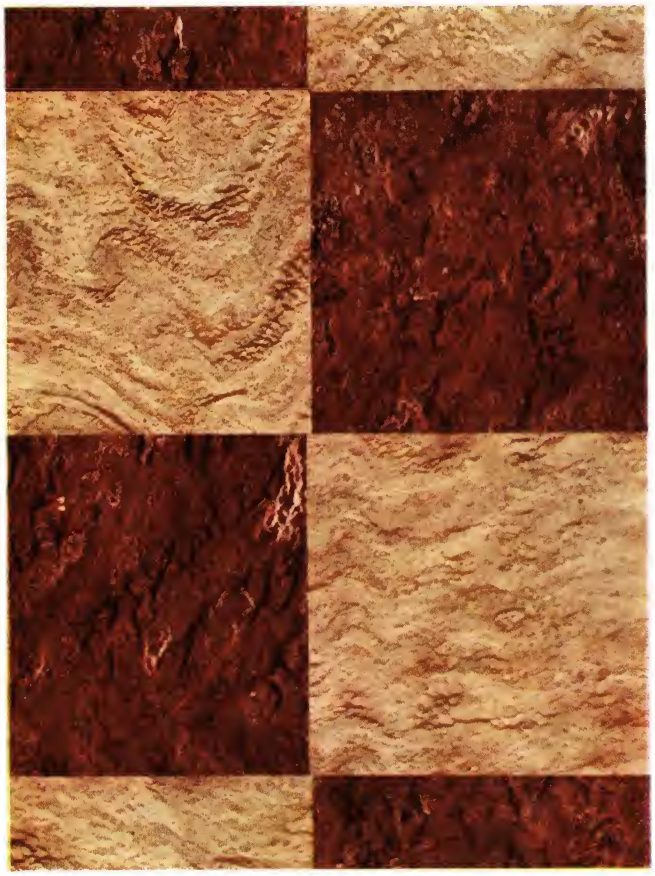
THE PARAFFINE COMPANIES, INC.

STYLES OF PABCO INLAID LINOLEUM

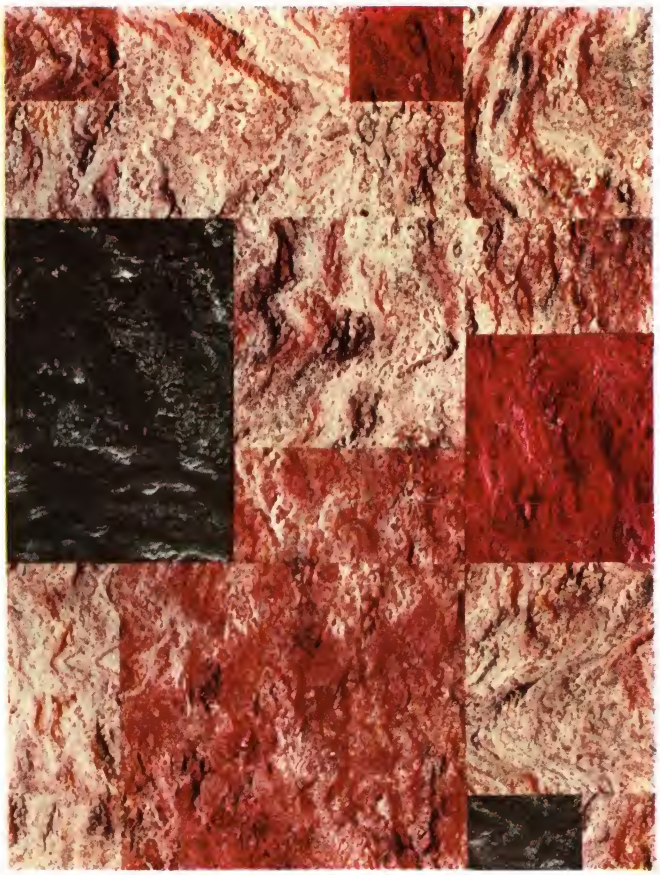
Pattern No. 2013 Standard Inlaid
HAND-PROCESSED, CROSS-DIRECTIONAL BLOCK DESIGN



Pattern No. 1036 Medium Inlaid
HAND-PROCESSED LINO-WEAVE



Pattern No. 4110 Heavy Inlaid
HAND-PROCESSED, ALTERNATING COLOR, CROSS-DIRECTIONAL SQUARES



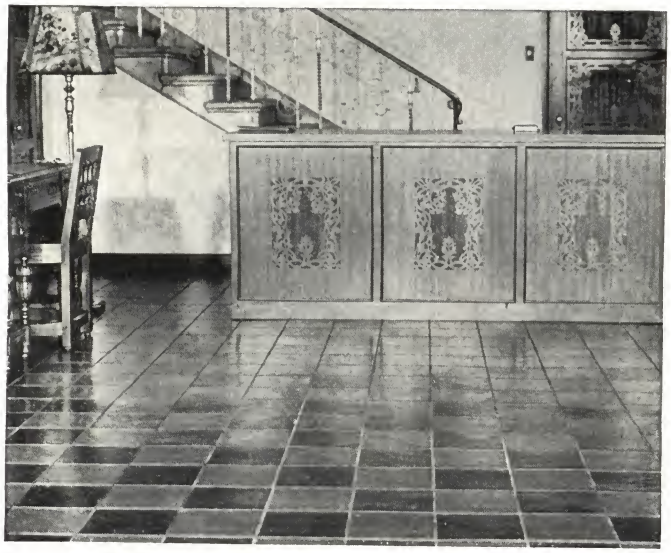
Pattern No. 4212 Heavy Inlaid
HAND-PROCESSED, JIG-SAW PATTERN

PABCO MASTIPAVE—A DURABLE, ECONOMICAL, ATTRACTIVE FLOORING FOR FACTORIES, OFFICES, STORES AND INSTITUTIONS

What Mastipave Is—An asphaltic, fiberized, mastic floor covering. Designed for practically all types of industrial, commercial and institutional floors. Probably the lowest cost floor covering available, considering its reasonable first cost and negligible maintenance expense. Additional savings are made possible because Mastipave can be laid without appreciable interruption to operations or without long tying-up of floor areas. It is installed quickly, can be placed in service immediately.

This floor covering is amazingly resistant to severe wear and abuse. It withstands the pounding of trucks . . . the tramp and scuffle of hurrying feet . . . the burn of lighted cigarettes and matches. It is resilient and "warm" underfoot. Provides a waterproof, rotproof, acid-resistant and vermin-proof floor.

Checkerboard Design With Contrasting Border for General Office Areas



¼-In. Spaced Tiles for Covering Ground Level Concrete

Where thorough washing of floors is important, Mastipave offers further notable advantages. It can be laid with cove base construction around walls and columns. Being absolutely waterproof, it thus completely seals the floor against leakage, providing a surface that is easily cleaned and waxed, therefore sanitary.

How It Is Laid—Either in 36-in. wide sheets or factory-cut tiles in gloss black, maroon, brown and dark green colors. Laid by cold-cementing direct to concrete, wood or metal floors with a specially compounded adhesive. Laid only by authorized applicators.

Mastipave Tile Floors

In stores, shops, offices, public buildings where attractiveness is as vital a requirement as durability, Mastipave Tile provides an economical answer. Possessing every quality of Mastipave that is inherent in the roll form, the Tiles may be laid in most attractive combinations of colors and designs, with or without feature strip and border. Pabco's Bureau of Design is ready to work with the architect in the suggesting of a Mastipave Tile floor for any installation.

Mastipave Tile and Border in Outer Office Lobby

Mastipave Tile in Factory Recreation Room

PABCO MASTIPAVE

TYPICAL INSTALLATIONS OF MASTIPAVE IN SHEET FORM

STORE-ROOM FLOORS. *Mastipaved because of the need for durability, economy, ease of keeping dust-free, insignificant maintenance cost.*

Mastipave in sheet or roll form is a veteran of many years standing. It has thoroughly *proven* all the qualities previously described. It has made floor replacement a matter of indefinite years instead of irritating frequency. For large area floors, it offers the practical solution of otherwise costly installations.

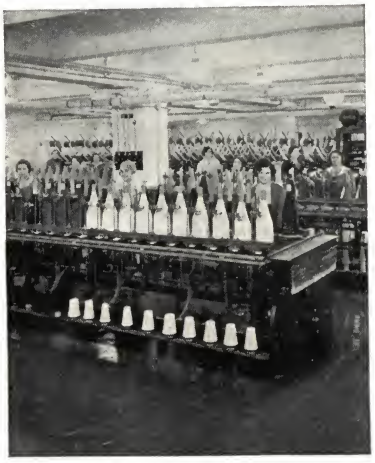
Special Announcement on Safety Floors

A newly introduced item in the Mastipave line is Grip-Tread Mastipave. By the introduction of a tough finely screened abrasive into the surface coating, a new type floor covering is made available to architects for use where a real slipping hazard exists. Grip-Tread Mastipave will be found to be unusually useful for installation on stair treads, steep inclines, trucking areas. Available in roll form only.

BUILDING CORRIDORS. *Showing how sheet Mastipave may be scored into tiles after application.*

LABORATORIES. *Mastipaved for an acid-resistant, easily cleaned, waterproof floor.*

CLASSROOMS. *Mastipave is today used in hundreds of schools and colleges throughout the Nation.*



FACTORY FLOORS. *A basement area Mastipaved for ease of sweeping, warmth and resilience under workers' feet, ability to withstand machine vibrations.*

TRUCKING AREAS. *Mastipave thoroughly resists severe trucking, is easily kept clean, cannot splinter or powder.*

SLOANE·BLABON

Linoleums

YOU CAN ALWAYS DEPEND ON A GOOD NAME

In 1843, young William Sloane founded the firm of W. & J. Sloane. Since that day, 94 years ago, this noted American institution has won genuine fame as a retailer and wholesaler of floor coverings—distributor and manufacturer of linoleum—specialist in decorating and house furnishing. All this experience enters into the complete line of linoleum products bearing the Sloane-Blabon guarantee of satisfactory service.

Quality and Cost

When you specify Sloane-Blabon Linoleum, you give your client many advantages not found in other types of floor products. Quality linoleum is easy to install and maintain. It is genuinely resilient, sanitary, and quiet. Stylishly colorful, modern linoleum adapts itself to any interior decorative scheme. Although slightly higher in initial cost than some other floor products, linoleum possesses such superior wearing qualities that, over a period of years, it actually costs less for service received. Installed according to approved methods, Sloane-Blabon Linoleum becomes a part of the floor. Repairs are practically unnecessary. Maintenance costs are exceedingly low.

Factory-Waxed

Sloane-Blabon Linoleum resists wear so successfully because its surface receives a tough, competent waxing *before* it leaves the factory. This finish produces a transparent lustre which improves with time and wear by filling the pores of the linoleum, preventing dirt from being ground in, and preserving the natural resiliency of the material. To maintain the waxed floor, simply brush daily and re-wax occasionally. *This is frequently one-third more economical than any other method.* Sloane-Blabon believes that its waxed finish is the most suitable for residential installations as well as for large commercial installations.

A handsome floor of Sloane-Blabon Terra Cotta Linoleum with a colorful inset figure features the Wardman Park Hotel cocktail lounge in Washington, D. C. The patrons really like it!

You, too, can plan this pleasing executive office by specifying a hand-laid floor of the new Sloane-Blabon Custombilt Tile. It gives you dignity, quietness and complete comfort underfoot.

In the lovely "House of Tomorrow" living room, sponsored by Ladies' Home Journal, Sloane-Blabon Clear White Linoleum harmonizes softly with white rugs and charming blue-white color scheme.

WHERE TO INSTALL VARIOUS TYPES OF LINOLEUM

Playing with iron and other metals becomes extra pleasant in the Hobby House of W. W. Colpitts, consulting engineer, with its Sloane-Blabon Brown Marbletone Inlaid Linoleum Floor and intriguing inset figure.

RECOMMENDED USES	TYPES, THICKNESSES AND COLORS AVAILABLE
For offices, corridors, assembly rooms, hospitals, public buildings, libraries, and similar "extreme wear" floor areas.	**BATTLESHIP LINOLEUM** (made to rigid specifications, U. S. Gov't): 6 m.m.—Brown only, 3/16" (4.76 m.m.)—Brown, Green, Gray Terra Cotta, Black; 1/8" (3.18 m.m.)—Brown, Green, Gray, Terra Cotta, Black
For offices and residences, especially where special designs are desired.	**PLAIN LINOLEUM**; 1/8" (3.18 m.m.)—Ocean Green, Azure Blue, Regal Blue, Clear White, Sunshine Yellow, Flame Orange, Burgundy Red; Medium (2.40 m.m.) and Standard (2.00 m.m.)—Brown, Green, Gray, Black, Ocean Green, Azure Blue, Regal Blue, Clear White, Sunshine Yellow. Flame Orange, Burgundy Red, Terra Cotta (medium only)
For same uses as for Battleship, but where more decorative effect is wanted; also, for background for rugs.	**JASPÉ LINOLEUM:** 3/16" (4.76 m.m.), 1/8" (3.18 m.m.). Medium (2.40 m.m.)—Brown, Copper Rust, Gray Green, Navy Blue, Sand, Apple Green, Sable
For stores, churches, hospitals, hotels, and other areas desiring hand-laid tile effects that have swankiness and snap.	**CUSTOMBILT TILE:** 1/8" Plain, Marbleized; 3/16" Plain, Marbleized
For churches, libraries, schools, and other "extreme quiet" areas.	**CORK CARPET:** 1/4" (6.35 m.m.)—Brown, Green
For smart shops, stores, galleries, private offices, reception rooms, etc., and residences where floor must harmonize with general decorative plan.	**MARBLETONE INLAID LINOLEUM:** "all-over" marbleization designs; 3/16" (4.76 m.m.); Heavy—1/8" (3.18 m.m.); Medium—(2.40 m.m.); Standard—(2.00 m.m.); heavy gauges best suited for contract work; lighter gauges best suited for residential work
Same as above.	**STRAIGHTLINE AND EMBOSSED INLAID LINOLEUM;** variety of designs and colors; Heavy—1/8" (3.18 m.m.); Medium—(Straightline only), (2.40 m.m.) Standard—(2.00 m.m.)
Same as above.	**STRAIGHTLINE INLAID LINOFLOR:** variety of designs and colors; (2.00 m.m.)
For all commercial and residential installations where the design is "custom built".	**FEATURE STRIP INLAID LINOLEUM BORDERS:** a one-piece border with three feature strips; variety of designs and colors; Heavy—1/8" (3.18 m.m.), Medium—(2.40 m.m.), Standard—(2.00 m.m.)

REGAL BLUE — 1/8", Medium and Standard Gauges

BURGUNDY RED — 1/8", Medium and Standard Gauges

OCEAN GREEN — 1/8", Medium and Standard Gauges

GRAY — 3/16", 1/8", Medium and Standard Gauges

FLAME ORANGE — 1/8", Medium and Standard Gauges

GREEN — 3/16", 1/8", Medium and Standard Gauges

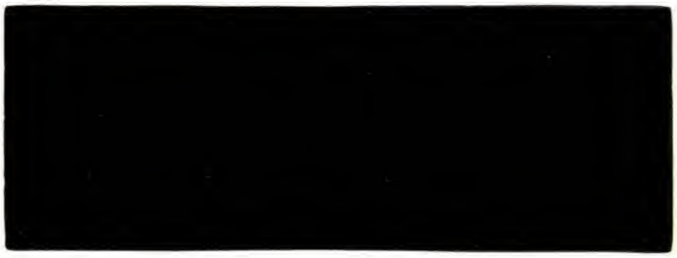
AZURE BLUE — 1/8", Medium and Standard Gauges

CLEAR WHITE — 1/8", Medium and Standard Gauges

SUNSHINE YELLOW — 1/8", Medium and Standard Gauges

BROWN — 6MM, 3/16", 1/8", Medium and Standard Gauges

TERRA COTTA — 3/16", 1/8" and Medium Gauges



JET BLACK — 3/16", 1/8", Medium and Standard Gauges

BROWN
3/16", 1/8", and Medium Gauges

COPPER RUST
3/16", 1/8", and Medium Gauges

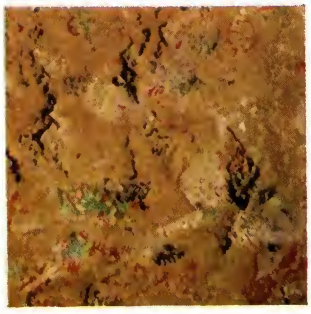
SAND
3/16", 1/8", and Medium Gauges

GRAY
3/16", 1/8", and Medium Gauges

SABLE
3/16", 1/8", and Medium Gauges

GREEN
3/16", 1/8", and Medium Gauges

Heavy Gauge . . No. 818
Medium Gauge . No. 918

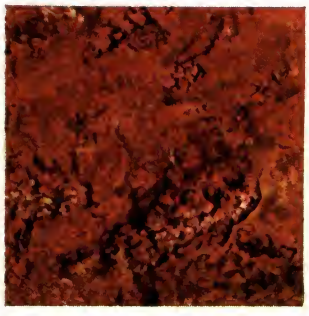


Heavy Gauge . . No. 813
Medium Gauge . No. 913
Standard Gauge . No. 393

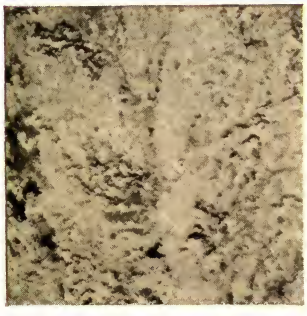
Heavy Gauge . . No. 819
Medium Gauge . No. 919
Standard Gauge . No. 404

3/16" Gauge . . . No. 1805
Heavy Gauge . . No. 805
Medium Gauge . No. 905

Heavy Gauge . . No. 809
Medium Gauge . No. 909



Heavy Gauge . . No. 804
Medium Gauge . No. 904

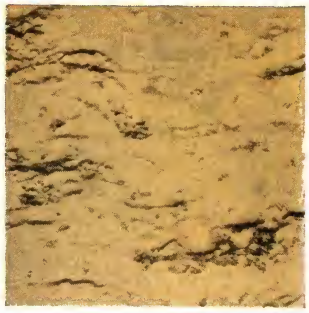


Heavy Gauge . . No. 811
Medium Gauge . No. 911
Standard Gauge . No. 391

3/16" Gauge . . . No. 1815
Heavy Gauge . No. 815
Medium Gauge . No. 915
Standard Gauge . No. 397

BLEACHED MAHOGANY
No. 260
3/16" and 1/8" Gauges

FOREST GREEN
No. 266
3/16" and 1/8" Gauges



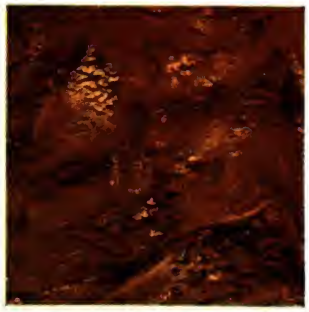
WHITE MARBLE
No. 263
3/16" and 1/8" Gauges

FRENCH BLUE
No. 267
3/16" and 1/8" Gauges

SILVER GRAY
No. 261
3/16" and 1/8" Gauges

GOLDEN OAK
No. 262
3/16" and 1/8" Gauges

BLACK MARBLE
No. 265
3/16" and 1/8" Gauges



INDIAN RED
No. 264
3/16" and 1/8" Gauges

GREEN No. 206
3/16" and 1/8" Gauges

RED No. 204
3/16" and 1/8" Gauges

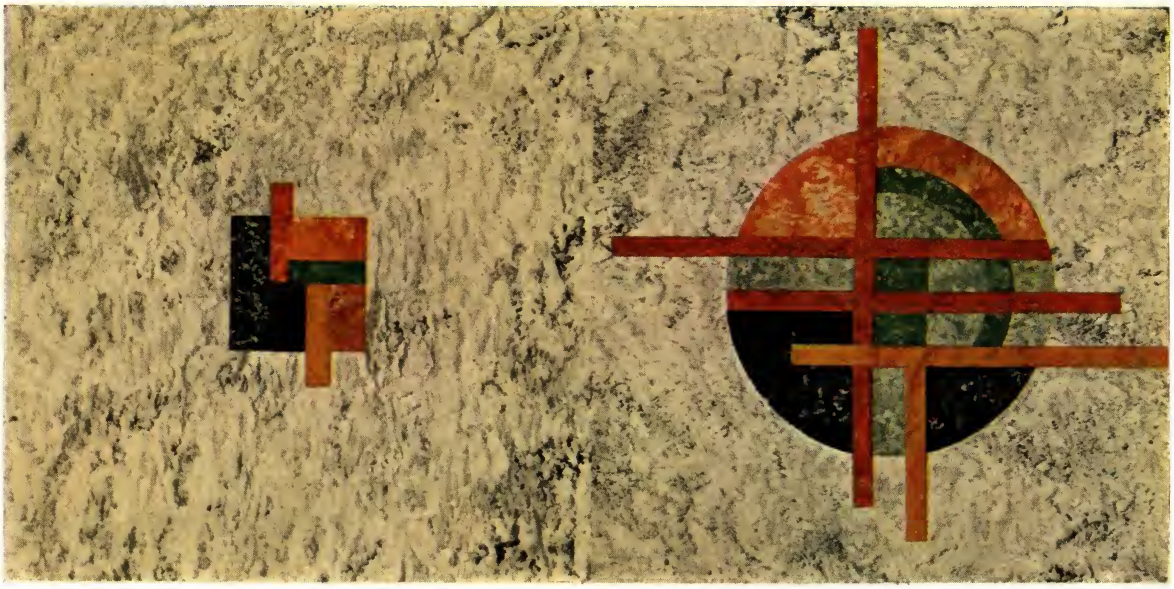
GRAY No. 201
3/16" and 1/8" Gauges

BROWN No. 202
3/16" and 1/8" Gauges

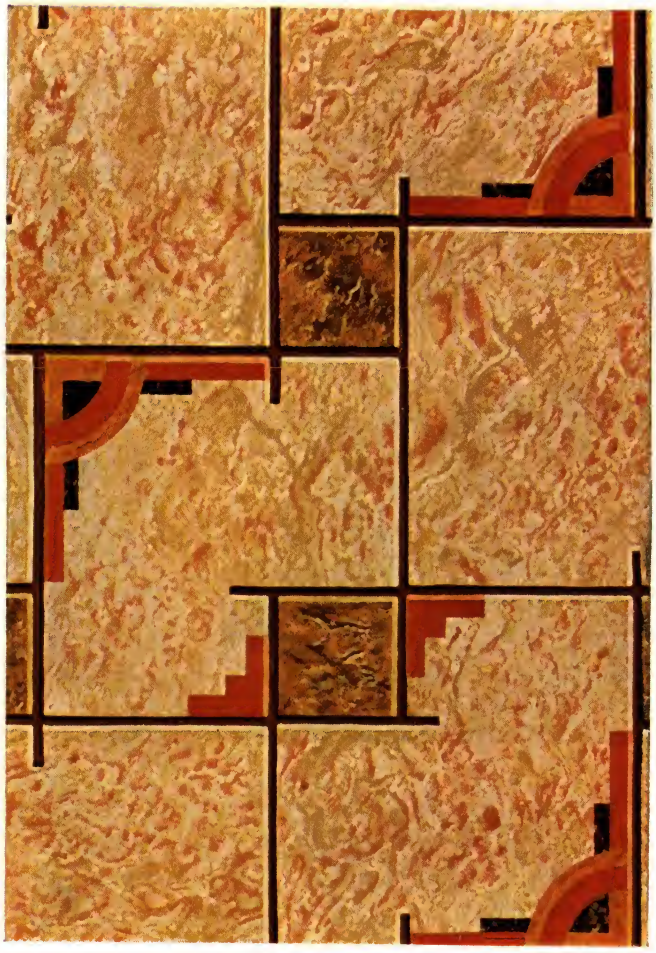
TAN No. 200
3/16" and 1/8" Gauges

WHITE No. 203
3/16" and 1/8" Gauges

BLACK No. 205
3/16" and 1/8" Gauges



No. 60 2 yards wide



No. 1702 2 yards wide

No. 1701 2 yards wide

LET LINOLEUM INSPIRE YOUR IMAGINATION

Today you have the material "tools" to create floor designs that are different. To the hundreds of colorful linoleum patterns, Sloane-Blabon adds feature strip borders as well as inset figures of almost every character. Let it inspire your imagination, and we'll feel repaid if it helps you.

SLOANE-BLABON LINOLEUM

The linoleum contractor shall furnish and install the materials hereinafter specified on the floor areas as follows:

MATERIALS—Linoleum: The linoleum used to be Sloane-Blabon Waxed Finish and shall be delivered on the job in full rolls, and shall conform to Federal Specifications..... Every roll must be marked with the maker's name and the grade of the linoleum. This material shall be subjected to a temperature of 70° F. for at least twenty-four hours before installation.

ADHESIVE—The adhesive shall be linoleum paste as manufactured by Sloane-Blabon or its approved equal.

SUBFLOOR CONDITION—The concrete subfloor shall be furnished to the linoleum contractor broom clean and satisfactorily dry. The surface shall be smooth, even troweled cement finish. Where expansion joints are present, the joints shall be filled in by the linoleum contractor with plaster of paris or other suitable material so that no marks will show through the surface of the linoleum. Installation should not proceed until an adequate test is made to assure that the floors are free from moisture or a written release obtained from the owner or contractor.

APPLICATION OF MATERIALS—On the subfloor thus prepared the linoleum shall be cut to fit the room accurately and neatly and shall be laid so as to have a minimum of seams. At junctions with vertical surfaces linoleum shall be carefully scribed so as to form a tight joint at these points. Allowance shall be made for from 1/2 to 3/4-in. lap at all seams for double cutting where Battleship, Plains, Jaspés and all-over marble patterns are used. (See note for pattern goods). The entire body of the linoleum shall then be secured to the concrete subfloor using Sloane-Blabon Linoleum Paste, and shall immediately be rolled from the center out, with a linoleum roller, weighing 150 lbs., to assure complete adhesion and to remove all air bubbles.

After the body of the linoleum has thus been adhered to the subfloor with the seams properly lapped, the seams shall be cut through the two thicknesses. The edges of the linoleum shall then be embedded into the adhesive and thoroughly rolled to assure a tight even workmanlike seam.

All seams and edges shall be thoroughly weighted down with sand bags to secure proper adhesion.

Where cross seams in linoleum are necessary, the linoleum should be lapped after pasting to within approximately 6 in. of where the seam is to be made. After the pasted area has been thoroughly rolled, the linoleum should be left in this lapped condition for at least an hour to permit any shrinkage, likely to occur. Paste should then be applied under the lapped linoleum and cut, using a straightedge, through both thicknesses. In pasting and removing the excess linoleum, any tendency toward excessive bending of the linoleum should be avoided.

NOTE: Specifications for Cutting Seams Where Pattern Goods are to be Installed.

Method A. The seams shall be only slightly lapped (not more than 3/16 in.). The edge of the upper sheet shall be used as a guide for cutting the lower sheet in order to secure tight and sightly seam.

Method B. (Alternate.) The sheets of linoleum shall be butted together in continuous contact between succeeding sheets and shall be secured by the removal of all high points along the butt edges of the linoleum with a block plane or other tool.

Either one of these two methods is necessary for the application of pattern goods in order that distortion of the pattern does not occur when the job is completed.

CLEANING OF LINOLEUM—The linoleum contractors shall remove all paste spots with a damp cloth, leaving the floor broom clean and in good condition.

PROTECTION—After the linoleum floors have been inspected and approved, the general contractor shall cover the linoleum with heavy paper in rooms where painting or other work is to be done, as a protection until the building is ready for occupancy.

LIGHTING, HEATING, HOISTING AND POWER—Without cost to the linoleum contractor, the owner or general contractor shall maintain a temperature of at least 70° F. during the time the linoleum work is being done; he shall light the rooms sufficiently for efficient work; he shall furnish hoisting service; he shall furnish the necessary electrical power to clean and polish the floor.

GUARANTEE—The linoleum contractor shall guarantee the floor against all defects in material and workmanship for one year from date of completion of the job.

SPECIFICATIONS FOR SUSPENDED WOOD SUBFLOORS

The linoleum contractor shall furnish and install the materials hereinafter specified on all wood subfloor areas as follows:

MATERIALS—Linoleum: The linoleum used to be Sloane-Blabon Waxed Finish and shall be delivered on the job in full rolls, and shall conform to Federal Specifications..... Every roll must be marked with the maker's name and grade of the linoleum. This material shall be subjected to a continuous temperature of 70° F. for at least 24 hours before installation.

LINING FELT—The felt shall be either unsaturated lining felt, or asphalt saturated lining felt. The unsaturated lining felt shall weigh approximately 1 lb. per sq. yd. The saturated felt shall have a minimum weight of approximately 1½ lbs. per sq. yd. Both saturated and unsaturated lining felt should be of a make as recommended by the manufacturer of the linoleum used.

ADHESIVE—The adhesive for adhering the lining felt to the wood floor as well as the linoleum to the lining felt shall be linoleum paste as manufactured by Sloane-Blabon or its approved equal.

SUBFLOOR CONDITION—The suspended wood base (if new) shall be furnished and installed by another contractor. This wood base shall be brought up to a surface .....below the finished floor level, and shall consist of thoroughly dry and well seasoned tongue and grooved lumber not more than 4 in. wide, preferably laid diagonally and toe nailed with about 1/32-in. joints close but not driven tight.

On old suspended wood subfloors the loose, defective or badly worn boards shall be replaced and securely nailed. Any unevenness in the boards shall be planed or sanded, smooth and even and cracks filled. This work shall be done by another contractor.

APPLICATION OF MATERIALS—On the wood subbase thus prepared there shall be installed 1 lb. unsaturated felt or 1½ lb. saturated felt, which shall be securely adhered to the base with Sloane-Blabon Linoleum Paste. It is preferable to lay the lining felt so that the length of the material will run across the boards. The felt is to be laid with carefully butted joints—all cross joints to be staggered. The felt shall be carefully cut to fit all vertical surfaces and shall be applied to the floor with Sloane-Blabon Linoleum Paste. The felt shall be thoroughly rolled into the adhesive with a linoleum roller weighing 150 lbs.

Over the felt lining thus completed apply Sloane-Blabon Linoleum which shall be cut to cover the area with the fewest possible seams. In those cases where it is economical to lay the lengths of the linoleum parallel with the lengths of the felt, care should be taken to avoid having the seams of the linoleum fall directly over the seams of the felt.

At junctions with vertical surfaces the linoleum shall be carefully scribed so as to form a tight joint at these points. Allowance shall be made for 1/2 to 3/4-in. lap at seams for double cutting where Battleship, Plains, Jaspes and all-over marble patterns are used (see note for pattern goods).

The entire body of the linoleum shall then be secured to the felt, using Sloane-Blabon Linoleum Paste and shall immediately be rolled from the center out with the linoleum roller to assure complete adhesion and to remove all air bubbles.

After the body of the linoleum has thus been adhered to the subfloor with the seams properly lapped, the seams shall be cut through the two thicknesses. The edges of the linoleum shall then be embedded into the adhesive and thoroughly rolled to assure a tight even workmanlike seam. All seams and edges shall be thoroughly weighted down with sand bags to secure proper adhesion.

Where cross seams in linoleum are necessary, the linoleum should be lapped after pasting to within approximately 6 in. of where the seam is to be made. After the pasted area has been thoroughly rolled, the linoleum should be left in this lapped condition for at least an hour to permit any shrinkage, likely to occur. Paste should then be applied under the lapped linoleum and cut, using a straightedge, through both thicknesses. In pasting and removing the excess linoleum, any tendency toward excessive bending of the linoleum should be avoided.

Continued on next page

NOTE: Specifications for Cutting Seams Where Pattern Goods are to be Installed.

Method A. The seams shall be only slightly lapped (not more than 3/16 in.). The edge of the upper sheet shall be used as a guide for cutting the lower sheet in order to secure a tight and sightly seam.

Method B. (Alternate.) The sheets of linoleum shall be butted together in continuous contact between succeeding sheets and shall be secured by the removal of all high points along the butt edges of the linoleum with a block plane or other tool.

Either one of these two methods is necessary for the application of pattern goods in order that distortion of the pattern does not occur when the job is completed.

CLEANING OF LINOLEUM—The linoleum contractor shall remove all paste spots with a damp cloth, leaving the floor broom clean and in good condition.

PROTECTION—After the linoleum floors have been inspected and approved, the general contractor shall cover the linoleum with heavy paper in rooms where painting or other work is to be done, as a protection until the building is ready for occupancy.

LIGHTING, HEATING, HOISTING AND POWER—Without cost to the Linoleum contractor, the owner or general contractor shall maintain a temperature of at least 70° F. during the time the linoleum work is being done; he shall light the rooms sufficiently for efficient work; he shall furnish hoisting service; he shall furnish the necessary power to clean and polish the floor.

GUARANTEE—The linoleum contractor shall guarantee the floor against all defects in material and workmanship for one year from date of the completion of the job.

In addition Sloane-Blabon Linoleums have always been guaranteed to be made of the best raw materials and of a quality and finish to meet the highest standards. Through authorized contractors, selected for the quality and excellence of their installations, we are now prepared to guarantee the owner of a Sloane-Blabon Linoleum floor that not only is the material of highest quality (in excess of United States Government requirements) but that it has been properly installed in accordance with Sloane-Blabon Specifications and in a workmanlike manner.

The term of the Guarantee varies according to the thickness of the linoleum used.

Only perfect merchandise carries this consumer protection. Backed by Sloane-Blabon Corporation and W. & J. Sloane Selling Agents, Inc., these Finished Floor Service Guarantees represent thorough protection to the consumer.

ESSENTIAL POINTS TO WATCH WHEN LINOLEUM IS BEING LAID

These are important points for an architect to bear in mind in preparing specifications. For convenience, therefore, they are given separately from the detailed specifications which follow:

(1) STORING OF LINOLEUM ON THE JOB—Linoleum should be stored in a dry place in an upright position, in a temperature of at least 70 degrees for 24 hours previous to using.

(2) UNPACKING LINOLEUM—Light, heat and power sufficient for efficient work shall be furnished by the general contractor, so that the linoleum contractor can do his work properly and without cost to the latter. In unpacking linoleum it is essential that it be done in a temperature of at least 70 degrees.

(3) FLOOR CONDITION—It is most essential that the floors be absolutely dry, clean and level to insure proper installation of linoleum. The presence of moisture, oil, paint, etc., will prevent proper adhesion of linoleum to underfloor.

(4) INSTALLING LINOLEUM—A. On concrete subfloors linoleum is installed direct to concrete underfloor using linoleum paste throughout as the adhesive.

B. On wood subfloors an interliner of felt weighing 1 lb. per sq. yd. is first installed on wood floors. In both installation of felt and linoleum, the adhesive is linoleum paste.

C. Floors on Grade—Unless floors are thoroughly dampproof and absolutely dry linoleum should not be installed on floors in contact with earth on or below grade.

(5) ADHESIVES—Linoleum paste is used throughout for all installations, whether direct to concrete or with felt interliner on wood floors.

On floors of marble, terrazzo, steel, etc., a linoleum cement adhesive is used.

(6) WORKMANSHIP—The linoleum contractor shall furnish competent labor thoroughly trained in the laying of linoleum.

TABLE WIDTHS, GAUGES AND WEIGHTS

Grades	Width	Approx. thickness	Gauge	Approx. sq. yds. per roll	Approx. wt. per sq. ft.
Battleship Linoleum—Waxed Finish					
6 m.m.—U.S.N. Standard	6 ft.	15/64-in.	6.00 m.m.	60	1.45
3/16-in.—U.S.N. Standard	6 ft.	3/16-in.	4.76 m.m.	60	1.17
1/8-in.—U.S.N. Standard	6 ft.	1/8-in.	3.18 m.m.	60	0.80
Plain Linoleum—Waxed Finish					
Medium	6 ft.	3/32-in.	2.40 m.m.	60	0.64
Standard	6 ft.	5/64-in.	1.90 m.m.	60	0.53
Jaspé Linoleum—Waxed Finish					
3/16-in.	6 ft.	3/16-in.	4.76 m.m.	60	1.17
1/8-in.	6 ft.	1/8-in.	3.18 m.m.	60	0.80
Medium	6 ft.	3/32-in.	2.40 m.m.	60	0.64
Cork Carpet					
1/4-in.	6 ft.	1/4-in.	6.35 m.m.	60	0.95
Custombilt Tile					
3/16-in.		3/16-in.	4.76 m.m.		1.25
1/8-in.		1/8-in.	3.18 m.m.		1.00
Marbletone Inlaid Linoleum—Waxed Finish					
3/16-in.	6 ft.	3/16-in.	4.76 m.m.	60	1.17
Heavy 1/8-in.	6 ft.	1/8-in.	3.18 m.m.	60	0.92
Medium	6 ft.	3/32-in.	2.40 m.m.	60	0.72
Standard	6 ft.	5/64-in.	1.90 m.m.	60	0.56
Straight Line Inlaid Linoleum—Waxed Finish					
Heavy 1/8-in.	6 ft.	1/8-in.	3.18 m.m.	60	0.92
Medium	6 ft.	3/32-in.	2.40 m.m.	60	0.72
Standard	6 ft.	5/64-in.	1.90 m.m.	60	0.56
Linoflor—Waxed Finish	6 ft.	5/64-in.	2.00 m.m.	60	0.50
Straight Line Inlaid—Linoflor	9 ft.			90	

BRIEF SPECIFICATIONS

Where brief specifications are desired the following will meet requirements:

Furnish and install Sloane-Blabon Wax Finish Linoleum as listed below.

Designate gauge and color, or pattern as the case may be, and the areas to be covered.

Linoleum to be installed in accordance with Sloane-Blabon standard specifications, shown in SWEET'S CATALOG.

MAINTENANCE SPECIFICATIONS

Linoleum protected by the famous Sloane-Blabon Waxed Finish is practically impervious to dirt, stains, etc. The wax thoroughly fills the pores of the composition, sealing the surface, and at the same time acts as a preservative for the linoleum.

The most economical and practical method of maintaining these floors is by simple brushing or dry mopping, supplemented by an occasional application of a standard brand of floor wax. A thin film of wax should be allowed to dry for 20 to 30 minutes.

Under normal conditions it will be seldom necessary to scrub linoleum with soap and water. At such times, a mild household soap is recommended as strong soaps and cleansing agents will ruin a linoleum floor. Too much wash water should be avoided as it may eventually damage the linoleum.

Too much weight concentrated on a given spot may mar the appearance or damage the face of your Sloane-Blabon Floor. Equip all desks, chairs, tables, etc., with sliding casters having a bearing surface of at least 1½ to 2 in. in diameter. Any hardware store can furnish you with these casters and with glass or bakelite furniture rests.

PARTIAL LIST OF RECENT SLOANE-BLABON LINOLEUM INSTALLATIONS

ALBANY, N. Y.

U. S. Post Office, Court House and Custom House	6,225 sq. yds.

BALTIMORE, MD.

Marine Hospital	5,500 sq. yds.

BUFFALO, N. Y.

City Hall	40,000 sq. yds.

BOSTON, MASS.

Park Square Building	43,000 sq. yds.
First National Bank	22,500 sq. yds.
Massachusetts State Office Building	16,000 sq. yds.
Bankers Warehouse	1,000 sq. yds.

BRENTWOOD, L. I., N. Y.

Pilgrim State Hospital	45,000 sq. yds.

CHICAGO, ILL.

U. S. Post Office	6,000 sq. yds.
Illinois Bell Telephone Co.	15,000 sq. yds.
Merchandise Mart	20,000 sq. yds.
Chicago Board of Education	4,500 sq. yds.
Graduate Building, University of Chicago	2,000 sq. yds.

DALLAS, TEX.

Southwestern Bell Telephone Co.	6,000 sq. yds.

EVANSTON, ILL.

Northwestern University	3,100 sq. yds.

HOT SPRINGS, ARK.

Army and Navy Hospital	7,500 sq. yds.

KANSAS CITY, MO.

Kansas City Power & Light	20,000 sq. yds.

LINCOLN, NEB.

Nebraska State Capitol	10,000 sq. yds.

LOS ANGELES, CAL.

City Hall	32,000 sq. yds.
County Hospital	82,000 sq. yds.
University of California	22,000 sq. yds.

MILTON, MASS.

Milton High School	2,000 sq. yds.

MILWAUKEE, WIS.

Northwestern Mutual Life Insurance Co.	17,300 sq. yds.

NEW HAVEN, CONN.

Yale University	18,000 sq. yds.

NEW YORK CITY

American Smelting & Refining Co.	2,000 sq. yds.
Bond and Mortgage Co.	4,500 sq. yds.
Chase National Bank	2,400 sq. yds.
Consolidated Gas Co.	100,000 sq. yds.
Hotel Waldorf-Astoria	12,000 sq. yds.
Metropolitan Life Insurance Co.	22,000 sq. yds.
New York City Dept. of Health Bldg.	16,000 sq. yds.
R.K.O. Offices, Radio City	3,650 sq. yds.
Port of New York Authority Bldg.	6,000 sq. yds.
Presbyterian Hospital	60,000 sq. yds.
Socony-Vacuum Bldg.	10,000 sq. yds.
Western Union Bldg.	19,000 sq. yds.
120 Broadway Corp.	5,000 sq. yds.

PALO ALTO, CAL.

Palo Alto Hospital	5,000 sq. yds.

PHILADELPHIA, PA.

U. S. Post Office	4,000 sq. yds.
Benjamin Franklin Hospital	14,000 sq. yds.
Women's Hospital	4,500 sq. yds.

PITTSBURGH, PA.

Koppers Building	20,000 sq. yds.

PORTLAND, ORE.

Pacific Telephone Bldg.	7,000 sq. yds.

PROVIDENCE, R. I.

Windmill Street School	5,800 sq. yds.

SMYRNA, DEL.

Home for the Aged	4,000 sq. yds.

SPRINGFIELD, MASS.

Massachusetts Mutual Life Insurance Co.	26,000 sq. yds.

UNITED STATES NAVY

Aircraft Carrier No. 4 Ranger	10,500 sq. yds.
Cruiser Tuscaloosa	5,000 sq. yds.

VINELAND, N. J.

Vineland State School	1,100 sq. yds.

WASHINGTON, D. C.

St. Elizabeth's Hospital	4,700 sq. yds.

ARCHITECTS' SERVICE DEPARTMENT

It has been the privilege of W. & J. Sloane, Selling Agents Division, as Selling Agents for floor covering manufacturers, to co-operate with Architects and Contractors in floor covering problems for over fifty years. Architects and Contractors are invited to use this service freely. It is rendered without cost or obligation. May we suggest that you address your letters to: W. & J. Sloane, Selling Agents Division, Inc., 295 Fifth Avenue, New York City, N. Y., or any of the branch offices listed on the last page. Let our many years' experience aid you.

SLOANE-BLABON DISTRIBUTORS and WAREHOUSE LOCATIONS

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Birmingham
City Paper Co.
Sloane-Blabon Warehouse

ARIZONA
Phoenix
Albert Mathias & Co.

ARKANSAS
Fort Smith
Berry Dry Goods Co.

CALIFORNIA
Los Angeles
Pacific Floor Covering Co., Inc.
San Francisco
California Shade Cloth Co.
Sloane-Blabon Warehouse

COLORADO
Denver
Morey Mercantile Co.
Sloane-Blabon Warehouse
Grand Junction
Salt Lake Hardware Co.

CONNECTICUT
Hartford
New England Floor Covering Co., Inc.
New Haven
New England Floor Covering Co., Inc.

FLORIDA
Jacksonville
Peaslee-Gaulbert Corp.
Miami
Feehans, Inc.

GEORGIA
Atlanta
Cowan-Boze Co., Inc.
King Hardware Co.
Sloane-Blabon Warehouse
Gainesville
Hosch Bros. Co.

IDAHO
Boise
Salt Lake Hardware Co.
Pocatello
Salt Lake Hardware Co.

ILLINOIS
Chicago
American Shade Cloth Co.
Western Floor Coverings, Inc.
Sloane-Blabon Warehouse

INDIANA
Indianapolis
Keifer-Stewart Co.
Terre Haute
Levin Brothers

IOWA
Des Moines
Negbaur & Sons
Sioux City
C. T. Hopper Furniture Co.

KANSAS
Atchison
Blish, Mize & Silliman Hardware Co.
Wichita
Negbaur & Sons

KENTUCKY
Buffalo
E. S. Ferrill & Son
Henderson
Lambert-Grisham Hdwe. Co.
Louisville
Louisville Tin & Stove Co.
Paducah
M. Livingston & Co.
Paintsville
Big Sandy Hardware Co.

LOUISIANA
New Orleans
Pan American Furniture Factory, Inc.
Sloane-Blabon Warehouse

MAINE
Portland
Sawyer Barker Co.

MARYLAND
Baltimore
Armon & Co.
Strauss Brothers, Inc.
Easton
Easton Wholesale Grocery Co.
Hagerstown
J. W. Myers & Co., Inc.

MASSACHUSETTS
Boston
Abrams Bros.
John H. Pray & Sons
Prescott & Co.

MICHIGAN
Detroit
Edson, Moore & Co.
Grand Rapids
C. J. Farley & Co.

MINNESOTA
Duluth
Sloane-Blabon Warehouse
Minneapolis
Janney, Semple, Hill & Co.
Nathan Pilam Wholesale Co.

MISSOURI
Kansas City
Negbaur & Sons
St. Louis
Midwest Lino. & Rug Co.

MONTANA
Great Falls
Great Falls Paper Co.

NEBRASKA
Omaha
Negbaur & Sons
Paxton & Gallagher Co.

NEW JERSEY
Trenton
United Tire Stores Co. (Fineburg's)

NEW MEXICO
Albuquerque
J. Korber & Co.

NEW YORK
Binghamton
Broome Distributing Co., Inc.
Buffalo
Joseph J. Weber

NEW YORK (Continued)
New York
Progressive Rug & Linoleum Co.
Stitt & Howell, Inc.
Trorlicht-Duncker Carpet Co.
Plattsburg
A. H. Marshall Co., Inc.
Rochester
Alling-Cory Company
Schenectady
Empire Floor Covering Co.
Syracuse
Sloane-Blabon Warehouse
Utica
Utica Plumbing Supply Co.

NORTH CAROLINA
Charlotte
Williams & Shelton Co.
High Point
Williams & Shelton Co.
Magnolia
J. A. Smith & Co.

NORTH DAKOTA
Fargo
Smith Follett & Crowl Co.

OHIO
Cincinnati
J. H. Hiboen D. G. Co.
Schuster Electric Co.
Cleveland
The Robert Levin Carpet Co.
Joseph J. Weber
Columbus
Tracy Wells Co.

OKLAHOMA
Oklahoma City
Negbaur & Sons

OREGON
Portland
Northwest Floor Coverings, Inc.

PENNSYLVANIA
Allentown
Armon & Co.
Altoona
Blair Floor Products (Samuel Beerman)
Danville
W. W. Welliver Hardware Co.
Erie
Joseph J. Weber
Harrisburg
Armon & Co.
Johnstown
Johnstown Dry Goods Co.
Philadelphia
Armon & Co.
Samuel Kramer & Co.
Tinkler & Company
Pittsburgh
Balter Paper Co.
Wilkes-Barre
Bravman Furniture Co.
York
York Paint & Hardware Co.

RHODE ISLAND
Providence
B. Alfred Fain

SOUTH CAROLINA
Charleston
Williams & Shelton Co.
Columbia
Williams & Shelton Co.
Spartanburg
Cooper Furniture Co.

TENNESSEE
Knoxville
Sterchi Brothers Stores, Inc.
Nashville
Renard Linoleum & Rug Co.

TEXAS
Beaumont
Tyrrell Hardware Co.
Dallas
Renard Linoleum & Rug Co.
El Paso
Albert Mathias & Company
Fort Worth
Ellison Furniture & Carpet Co.
Fakes & Co.
The Shield Co., Inc.
Houston
Readers Wholesale Distributors
Sloane-Blabon Warehouse
Lubbock
Wm. Cameron & Co., Inc. Wholesale
San Antonio
Wm. Cameron & Co., Inc. Wholesale
Texarkana
Wm. Cameron & Co., Inc. Wholesale

UTAH
Salt Lake City
Salt Lake Hardware Co.

VIRGINIA
Lynchburg
Bailey-Spencer Hardware Co.
Norfolk
J. J. Haines & Co.
Richmond
J. J. Haines & Co.
Roanoke
Williams & Shelton Co.
Staunton
Worthington Hardware Co.

WASHINGTON
Seattle
Northwest Floor Coverings, Inc.
Sloane-Blabon Warehouse
Spokane
Northwest Floor Coverings, Inc.

WEST VIRGINIA
Beckley
Raleigh Hardware Co.
Charleston
Eskew, Smith & Cannon
Parkersburg
H. P. Dils & Son Co.
Wheeling
John S. Naylor Co.

WISCONSIN
Madison
Wisco Hardware Co.
Milwaukee
Morley-Murphy Company

W. & J. SLOANE • SELLING AGENTS DIVISION

295 FIFTH AVENUE, NEW YORK

Sole Selling Agents for

SLOANE-BLABON CORPORATION

Trenton, N. J. • Philadelphia, Pa.

SALES OFFICES:

ATLANTA
313 Connally Building

BOSTON
Harvey Bldg.
52 Chauncey Street

CHICAGO
Merchandise Mart
222 North Bank Drive

COLUMBUS, OHIO
41 West Spring Street

DALLAS
Melba Theatre Building

DENVER
1130 16th Street

DETROIT
624 Book Building

KANSAS CITY, MO.
1523 Grand Avenue

LOS ANGELES
Furniture Mart
2155 E. 7th Street

PHILADELPHIA
Public Ledger Building

PITTSBURGH
Heeren Building
140 Eighth Street

PORTLAND, ORE.
415 N.W. Couch Street

SALT LAKE CITY, UTAH
105 North Third West St.

ST. LOUIS
1700 Washington Avenue

SAN FRANCISCO
Western Furn. Exchange and Merchandise Mart
Market and Tenth Streets

SEATTLE
2030 Westlake Avenue

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SECTION 11

CONTINUED ⟶

E. L. BRUCE CO.

Hardwood Floorings, Lumber, Floor Finishes, and Terminix

EXECUTIVE OFFICES
MEMPHIS, TENN.

SALES OFFICES IN PRINCIPAL CITIES

MILLS

NASHVILLE. TENN.
CAIRO, ILL.

MEMPHIS, TENN.
LAUREL, MISS.

LITTLE ROCK, ARK.
BRUCE, MISS.

REED CITY, MICH.
OAK GROVE, LA.

TORONTO, ONT., CANADA

(For Page on Bruce Floor Finishes, see File Index)

PRODUCTS

Bruce Strip Floorings, Unit-Wood Blocks (Nail and Mastic-Laid), Solid Oak Floor Planks; Ceda'line (Aromatic Red Cedar Closet Lining); Bruce Floor Finishes; Everbond Floor Mastics; Terminix Insulation, and Bruce Preservatives.

Also manufacturers of: Oak and Gum Finish and Mouldings; Stair Treads; Furniture Dimension Stock; Oak Bridge Plank and Timbers; Yellow Pine; Hardwood Lumber, air-dried or kiln-dried, rough or surfaced; Bruce Asphalt Paints; and Bruce No-Chek.

BRUCE STRIP FLOORINGS

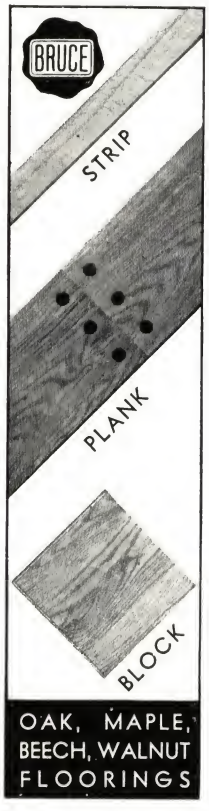
With modern plants in six strategic locations, E. L. Bruce Co. is the world's largest maker of hardwood floorings. Red Oak, White Oak, Beech and Maple are manufactured in all standard sizes and grades. Careful kiln drying, machining, grading and handling insure uniformity and high quality.

Bruce Floorings are sold through leading retail lumber dealers everywhere. Large stocks are carried in wholesale distributing warehouses in every section of the country.

Bruce Oak and Beech Floorings are graded in accordance with the rules of the National Oak Flooring Manufacturers' Association. Bruce Northern Hard Maple Flooring, manufactured at the Reed City, Michigan Plant, carries the Maple Flooring Manufacturers' Association stamp of approval.

Sizes and Grades

Oak—*Sizes:* 25/32"x2¼", 25/32"x2", 25/32"x1½", ½"x2", ½"x1½", ⅜"x2", ⅜"x1½", 5/16"x2" (square edge). *Grades:* Clear Quartered White, Clear Quarter Red, Select Quartered White, Select Quartered Red, Clear Plain White, Clear Plain Red, Select Plain White, Select Plain Red, No. 1 Common White, No. 1 Common Red, No. 2 Common Mixed, No. 1 Com. & Better Shorts (10"-18").



Maple — *Sizes:* 25/32"x3¼", 25/32"x2¼", 25/32"x2", 25/32"x1½", 33/32"x3¼", 33/32"x2¼", 33/32"x2", 33/32"x1½", ⅜"x2", ⅜"x1½", 25/32"x3½" (jointed), 33/32"x3½" (jointed). *Grades:* Selected White, First Grade, Second Grade, Third Grade, Second and Better.

Beech — *Sizes:* 25/32"x2½", 25/32"x1½". *Grades:* First Red Beech, First Beech, Second Beech, Third Beech, Second and Better, Third and Better Shorts (10"-18").

OAK FLOOR PLANKS

See page 6 for complete details, illustrations, architect's specifications, etc., on Bruce Solid Oak Floor Planks.

UNIT-WOOD BLOCKS

See following pages in this section for details, illustrations, architects' specifications, etc., on Bruce Unit-Wood Blocks.

BRUCE FLOOR FINISHES

Realizing that lasting beauty and durability of hardwood floors depends on proper finishing, E. L. Bruce Co., has devoted years to research and experimentation in the field of floor finishing. As a result, the Bruce Penetrating Seal Method has been developed, and is specifically approved by the two hardwood flooring associations — NOFMA and MFMA. A special section on Bruce Floor Finishes will be found by referring to the File Index under E. L. Bruce Co.

EVERBOND FLOOR MASTICS

Everbond X is a newly perfected and improved mastic which sets up quickly and firmly. Has great adhesive and cohesive strength and bonds blocks solidly to sub-floor. Requires slight heating before application. Everbond X is strongly recommended as being more economical to apply and more satisfactory in every way than cold application mastic. If cold application mastic must be used, Everbond B should be specified. Both Everbond X and Everbond B cover approximately 20 sq. ft. to gallon. Adapted to application of any type of blocks, herringbone, or design oak flooring to be laid in mastic.

BRUCE CEDA'LINE

Ceda'line is cedar closet lining manufactured from the heartwood of Tennessee Aromatic Red Cedar, a wood which imparts an odor pleasing to humans but repellant to moths.

Sizes—⅝x2 in., ⅝x2½ in., ⅝x3¼ in. Quarter-round and a special size for floors (25/32x2¼ in.) also available. One grade only, permitting sound knots.

Application — Ceda'line is tongued, grooved and endmatched. Building paper to be used, applying Ceda'line by blind nailing to studding. Furring strips should be used in applying over lath and plaster in old homes. In new homes the cost is little more than the lath and plaster replaced. Use no finish whatsoever, as varnish, paint, etc., destroy aromatic qualities. For maximum protection Ceda'line must be applied to the closet floors and back of doors, as well as to walls and ceilings.

BONDED TERMINIX INSULATION

Terminix, manufactured exclusively by Bruce, is a chemical applied only by Bruce-trained Terminix Application Companies for termite control in homes and buildings. Represented throughout 34 termite-infested States, offices in 150 cities, free termite inspections and reports without obligation. Performance by Terminix Licensees on every standard Terminix Contract for a period of five (5) years is guaranteed by E. L. Bruce Co. This guaranty is fully insured by Sun Insurance Office Ltd., the world's oldest insurance company. Terminix Licensees of E. L. Bruce Co. comprise the world's largest termite control organization.

BRUCE PRESERVATIVES

Impregnating the wood inexpensively, Bruce Preservatives immunize wood to rot and insect attack, are non-volatile, and non-toxic to humans; do not chemically react with wood.

May be applied to rough, finished, or dimension lumber. Bruce Preserved wood is practically odorless. The moisture content is not affected, and there is no distortion or checking during or after processing. Unqualifiedly recommended for general construction wherever protection against decay and insects is required.

E. L. Bruce Co. in its laboratories has developed preservatives for many specific uses and will be glad to assist in any wood preservation problem.

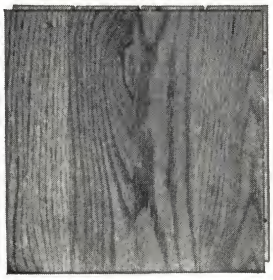
LITERATURE

Illustrated literature is available on all Bruce products. Also, complete architects' specifications and installation manuals. Write E. L. Bruce Co., Memphis, Tenn.

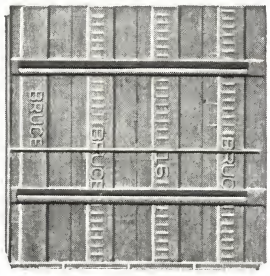
BRUCE UNIT-WOOD BLOCKS

Patterned hardwood floors, with their style, beauty, and durability, are now practical not only for homes, and apartments but also for hotels, schools, clubs, offices, stores, industrial and public buildings. This is made possible by the Bruce Unit-Wood Block, a patented Flooring that can be simply and inexpensively laid in floors of various designs. These Blocks are fabricated from strip flooring (see table on next page for woods, grades, sizes, etc.) into square or rectangular tongued-and-grooved blocks, beveled or square-edged.

There are two types: Bruce Nail Blocks, for blind nailing over wood floors or sub-floors; Bruce Mastic Blocks, for laying in Everbond, a sound-deadening plastic cement over concrete, steel or similar sub-floors. Both types can be obtained *ready-finished,* requiring no sanding or finishing whatever on the job, or *unfinished* for sanding and finishing after laying. The cost of Bruce Unit-Wood Block flooring is competitive with composition floor coverings and other types of flooring.



Face of Bruce Block



Back of Bruce Block

BRUCE FINISHED BLOCKS

Both types of Bruce Blocks (Nail and Mastic-Laid) are *ready-finished* if specified, thus requiring no sanding or finishing whatsoever after installation.

Bruce Finished Blocks are completely finished at the Bruce Plants. This finishing includes the operations of sanding, filling, treatment with a superior penetrating-type finish, burnishing with steel wool, waxing, and rubbing to a final polish. The finishing materials and methods used are the result of years of experiments and practical tests. The various operations are performed largely by machinery and under controlled temperature and humidity conditions. The result is a uniform finish of unusual durability which will not crack or peel, and is resistant to grease, dirt and stain—a finish that brings out and retains all the natural beauty of the wood.

Bruce Finished Blocks are 6¾, 7½, 9 or 11¼ in. square and are manufactured in $^{25}/_{32}$ and $^{33}/_{32}$ in. Oak, Maple and Beech and $^{25}/_{32}$ in. Walnut. Oak Blocks are available in Light, Medium or Dark Finish. Maple, Beech and Walnut Blocks are finished Natural.

All Bruce Finished Blocks have beveled edges which emphasize the block design and prevent any appearance of unevenness due to irregularities in laying or in the sub-floor.

"Arabesque" Grade Oak Blocks

This is one of the 21 different types of Bruce Blocks. This grade emphasizes the natural beauty and characteristics of wood through interesting irregularities of color and grain. Provides a flooring of style and distinction at low cost.

Installation by Nailing

The Bruce Nail Block is specifically designed for nailing over wood sub-floors or old wood floors. An equal number of right-tongue and left-tongue blocks is shipped on each order, so that tongues are always exposed for blind nailing as the floor is laid. The tongues have drilled nailholes, which facilitate nailing and prevent splitting of tongues. These nailholes are placed at an angle which holds the blocks down properly.

Bruce Nail Blocks can easily be installed by following simple directions. They are nailed like strip flooring, and no extra equipment or especially trained mechanics are required. The Bruce Nail Block makes it practical to use Block floors in homes, apartments, and other areas with wood sub-floors; whereas, in the past, the use of these distinctive floors has been restricted mainly to large areas where they could be laid economically in mastic over concrete sub-floors.

Write for "Installation Manual" containing complete directions and detailed line drawings as a guide to operators in laying Bruce Nail Blocks in both square and diagonal designs. *(See also Specifications for Laying Bruce Nail Block Floors on pages 4 and 5.)*

Installation in Mastic

Bruce Mastic-Laid Blocks are laid in Everbond X or Everbond B, adhesive bituminous compounds applied to the sub-floor. *(See installation picture on next page.)* This type of Block is to be used where there is a concrete, steel or similar sub-floor. The use of Bruce Mastic-Laid Blocks over a wood sub-floor is usually not recommended, the logical method of application over a wood sub-floor being by nailing Bruce Nail Blocks.

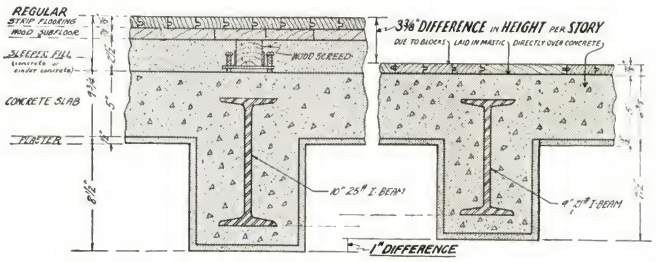
The application of the Blocks in Everbond X or Everbond B provides a substantial thickness of mastic (about $^{3}/_{32}$ in.) between the Blocks and the concrete or other sub-floor, and thereby furnishes a insect-deterrent under-layer of material. The bed of Everbond also acts as a cushion and provides a quiet and resilient floor.

Other advantages of a Bruce Block Floor laid in mastic are: (1) Elimination of possibility of rotting screeds. (2) Very sanitary, being laid directly over sub-floor with no air space underneath. (3) Less fire hazard; test fires built on Bruce Mastic-Laid Block Floors would not spread. (4) Saving in construction costs. (*See diagram and explanation on next page.*)

Installing Bruce Blocks by Laying in Mastic

Economy in Laying Over Concrete

Bruce Mastic-Laid Blocks, laid in Everbond X or Everbond B directly over concrete, save the material and labor cost of wood subfloor, screeds and cinder fill; also, approximately from 2½ to 3⅜ in. in height per story, without loss of headroom. This combined saving often exceeds the entire cost of the floor laid and finished.



Maintenance and Durability

A Bruce Wood Block floor, either ready-finished or finished on the job with a penetrating finish *(refer to File Index and see special section on Bruce Floor Finishes)*, can be maintained at a cost less than that for almost all substitutes for wood flooring. Mopping with a wet or damp rag should never be tolerated. Floor should be swept with a dry, soft broom.

In case of unusual wear or accidental damage, worn portions of this type of floor can be replaced inexpensively and more easily than almost any substitute.

TABLE OF WOODS AND SIZES

Rectangular blocks, 6x12 in. and 6¾x13½ in. Square blocks are available in the following woods and sizes:

Oak 25/32 and 33/32 in. thick	Beech 25/32 and 33/32 in. thick	Maple 25/32 and 33/32 in. thick	Walnut 25/32 and 33/32 in. thick
6¾ in.	6¾ in.	6¾ in.	6¾ in.
7½ in.	7½ in.	7½ in.	7½ in.
9 in.	9 in.	9 in.	9 in.
11¼ in.	11¼ in.	11¼ in.	11¼ in.

The woods listed above are available in the following grades:

Oak—Clear Qtd. White, Clear Qtd. Red, Select Qtd. White, Select Qtd. Red, Clear Plain White, Clear Plain Red, Select Plain White, Select Plain Red, No. 1 Com. White or Red, "Arabesque," No. 2 Common, Factory.

Beech—First Red, First, Second, Third, Factory.

Maple—Selected White, Bird'seye, First, Second, Second and Better, Third, Factory.

Walnut—First Black, Second.

Literature

Architects' Data Sheets, loose leaf A.I.A. file size.
Illustrated Booklet—"Patterned Hardwood Floors."
Installation Manual for Bruce Mastic and Nail Blocks.
Brochure of Photographs of Bruce Block Floors.
Leaflet "Bruce Finished Blocks."
Specify whether interested in Bruce Nail Block or Bruce Mastic-Laid Block, or both.

TYPICAL INSTALLATIONS OF BRUCE NAIL AND MASTIC-LAID BLOCKS

Photographs on this and following pages are indicative of the versatility of Bruce Blocks. Appearance is of prime importance in residences, ballrooms, hotels, clubs; service and durability in public buildings, gymnasiums, shops, hospitals, etc. A Bruce Block Floor offers durability, warmth, beauty and style. The various grades and woods of Bruce Blocks permit the selection of the exact type of floor for every purpose. Either Nail or Mastic-Laid Blocks may be obtained ready-finished, requiring no sanding or finishing whatever after laying.

RESIDENCE—Bruce Select Plain Red Oak Blocks in Birchwood Beach, Mich. House
JOHN LLOYD WRIGHT, Architect

APARTMENT—Bruce Clear Plain White Oak Blocks (Finished Light and Dark) in Memphis, Tenn. Model Apartment

OFFICE—Bruce First Black Walnut Blocks in Private Office—Max Factor Studios, Hollywood, Cal.
S. CHARLES LEE, Architect

GENERAL SPECIFICATIONS FOR HARDWOOD FLOORS

(Nail Block, Mastic-Laid Block, Plank or Strip)

(1) General Conditions

The General Conditions governing the General Contract shall apply to the work under this division of the specifications.

Note: The American Institute of Architects' standard form of General Conditions is advocated.

(2) Work Included

The work included under this heading shall be the furnishing, laying (and finishing) of hardwood flooring in the following areas:

Note: Here list and locate the areas. If Bruce Finished Blocks are to be used, omit reference to finishing as none is required.

(3) Preliminary Provisions

Provision will be made under other specification divisions that all sub-floors, trim, etc. shall be installed in accordance with specifications of E. L. BRUCE CO.

(4) Inspection and Cleaning

(4a) **Inspection**—Before laying the flooring this contractor shall carefully inspect all sub-floors, erected trim, etc. and shall notify the architect promptly in writing of any defects which will in any way deleteriously affect the flooring installation. Failure to so notify the architect of these defects will be construed as acceptance of the work as executed and full responsibility for the finished results.

(4b) **Cleaning**—Thoroughly clean all sub-surfaces of dust or other foreign matter before laying the floor.

(5) Materials

(5a) **Flooring**—Finished floors shall be *(here specify whether Bruce Block, Bruce Strip or Bruce Plank Flooring is to be used)* as manufactured by E. L. BRUCE CO. of Memphis, Tenn. Sizes, thicknesses and varieties of wood shall be as listed in paragraph (6).

(5b) **Finish**—

Note: No finishing to be done if Bruce Finished Blocks are to be used. If unfinished flooring is used, here specify the stains, fillers, finishes, etc. selected. We recommend penetrating finishes such as manufactured by E. L. BRUCE CO. *(See File Index for special section on Bruce Floor Finishes.)*

(6) Patterns, Etc.

Note: Here list, locate and describe the various woods, grades, types, sizes and thicknesses of flooring to be used. If Bruce Blocks are to be used, indicate whether Nail or Mastic-Laid type and whether finished or unfinished.

(7) Laying

All flooring shall be laid in strict accordance with directions of E. L. BRUCE CO. applying to particular installation.

Note: Brief specifications covering installation of Bruce Nail Blocks, Bruce Mastic-Laid Blocks and Bruce Solid Oak Planks are given in following pages. Complete instructions which must be followed in all cases will be furnished on request to E. L. BRUCE CO. *Strip flooring should be laid in accordance with N.O.F.M.A. and M.F.M.A. standards.*

(8) Sanding and Finishing

(Omit if Bruce Finished Blocks are to be used.)

All floors shall be properly sanded, leaving a smooth surface without sander marks.

Note: Here specify the various steps in the finishing process. If the Bruce Penetrating Seal Method of finishing is specified, instruct that floors be finished in accordance with booklet, "How to Finish and Maintain Wood Floors the Bruce-Way." If Bruce Finished Blocks are used, no finishing instructions necessary.

(9) Protection

During all stages of the work the flooring shall be adequately covered and protected from injury until completion and acceptance. It is advisable to delay the installation of floors until other craftsmen have finished their work.

(A) SPECIFICATIONS FOR LAYING BRUCE NAIL BLOCK FLOORS

(A1) Sub-Floors

(A1a) **New (Wood)**—Solid wood sub-floors shall be thoroughly seasoned and dry, and shall be made of not wider than six-inch (6 in.) dressed stock, not less than thirteen-sixteenth ($\frac{13}{16}$ in.) thick; floor joists not more than sixteen inches (16 in.) on centers. Sub-floor must present an even bearing surface and shall be double face-nailed, preferably with cement-coated eight-penny nails.

Sub-floor shall be laid diagonally with the room for square pattern; straight with the room for diagonal pattern.

Place one layer of 30-pound tarred or asphalt felt between sub-floor and finished floor.

(A1b) **Old (Wood) Sub-Floors or Floors**—All conditions applicable to new wood sub-floors shall apply. All rotten, splintered, weakened or warped boards shall be replaced. All loose nails shall be drawn out and the boards re-nailed. Place one layer of 30-pound tarred or asphalt felt between sub-floor and finished floor.

HOUSING PROJECT—750,000 Sq. Ft. Bruce Oak Blocks Installed in the 1388 Apartments in the Hillside Housing Development, Bronx, N. Y.
CLARENCE S. STEIN and FRANK E. VITOLO, Architects

CLUB—Bruce Maple Blocks in Special Design at Club Casanova, Hollywood, Cal.

POST OFFICE—U. S. Post Office, Chicago, Ill.—2,000,000 Sq. Ft. of Bruce Blocks Used in the Working and Office Areas
GRAHAM, ANDERSON, PROBST & WHITE, Architects

SCHOOL—Bruce Second Maple Blocks in LeMoyne College, Memphis, Tenn. GEO. AWSUMB, Architect

NAIL BLOCK SPECIFICATIONS (Continued)

(A2) Baseboards, Grounds and Plinths

(A2a) Grounds for baseboard shall be set parallel to and one and three-quarter inches above sub-floor. No plastering between lower ground and sub-floor. All baseboards shall be set (after the Block Floor has been laid) so that there shall be one-quarter inch (¼ in.) minimum clearance above top of finished block floor at all points. Plinth blocks shall be set to a clearance of one-eighth inch (⅛ in.).

(A2b) Base shoe moulds shall project beyond the face of the base at least three-quarters of an inch (¾ in.) and shall be attached to the base-board only (not to the flooring) with a full one-sixteenth (1/16 in.) clearance between the surface of the finished floor and the underside of the shoe mould.

(A3) Pipe Collars

(A3a) All electric outlets, radiator connections, piping, etc., shall be provided with suitable collars to cover the necessary expansion area.

(A4) Laying

(A4a) All Bruce Nail Blocks shall be laid in strict accordance with directions applying to the particular installation as set forth in manufacturer's "Installation Manual for Bruce Wood Block Floors," under section headed "How to Lay Bruce Nail Block Floors." In general, installation is as follows:

(A4b) Blocks shall be blind nailed in nail holes with 6d finish nails, setting nail heads, except blocks at wall line which shall be face nailed on the edges which will be covered by base shoe mould.

(B) SPECIFICATIONS FOR LAYING BRUCE MASTIC-LAID BLOCK FLOORS

(B1) Sub-floors

(B1a) **Concrete**—The topping, or finish coat of the concrete slab, shall be made as follows: Screed off the slab, removing any large rocks that might affect the surface, being careful not to "puddle" the mix until sloppy. Uniformly dust this freshly screeded concrete with a dry mixture of 50 per cent sand and cement. Trowel this dusted surface with a wood float or a leveling darby float to a uniform level finish without projections or depressions. Adequately protect this surface from injury until the concrete slab sub-floor has "set." Protect all sub-floors, as finished, against concrete or plaster droppings. Concrete shall be primed with one coat of good asphalt priming paint.

(B1b) **Old Concrete**—All conditions applicable to new concrete sub-floors shall apply. If sub-floor does not meet requirements and presents an uneven bearing surface, it shall be leveled off in accordance with the specifications, which will be supplied by E. L. Bruce Co.

(B1c) **Steel**—Steel shall be free from rust, dust, grease and loose foreign matter and free from any projection that might prevent uniform contact of the blocks with the sub-floor surface. Steel shall be primed with one coat of good asphalt priming paint. Blocks shall not be laid until priming coat is thoroughly dry.

(B2) Waterproofing

(B2a) All floors in direct contact with the ground or below grade, or sub-floors above grade where there is not sufficient ventilation to eliminate moisture condensation, shall be membrane waterproofed according to the following specifications: If only a portion of floor is ventilated, or if there is a basement under only a portion of the building, and balance of concrete slab is in direct contact with ground or not properly ventilated, the entire floor slab shall be membrane-waterproofed.

(B2b) The concrete sub-floor shall be smooth, clean, dry and free from loose material and foreign matter.

(B2c) Over the concrete sub-floor a two-ply membrane waterproofing of *(asphalt) (coal tar pitch)* and *(asphalt saturated) (tarred)* felt shall be laid. *(Note: Select either "asphalt and asphalt saturated felt" or "coal tar pitch and tarred felt" as desired.)*

(B2d) Prime the concrete surface with asphalt primer before application of the membrane waterproofing. *Note: Include only if "asphalt and asphalt saturated felt" are specified.*

(B2e) Coat the entire surface of the concrete sub-floor with waterproofing pitch, into which, while hot, embed a layer of fifteen-pound saturated felt, lapping sheets seventeen inches (17 in.). A half sheet shall be used in starting so that a full two-ply membrane results at all points. The sheets shall be laid without wrinkles, buckles or blisters, and well rubbed into the hot pitch so that a complete bond is obtained between felt and sub-floor. Care shall be taken that the entire surface of the first layer of felt is mopped solid with hot pitch, so that in no place shall felt touch felt. Do not mop top layer. At all wall angles, columns, etc., the felt shall be laid in at a right angle and brought up the wall at least four inches (4 in.) above the finished floor behind the base.

(B3) Baseboard, Grounds and Plinths
(B4) Pipe Collars

Note: Provisions are same as set forth above in sections A2 and A3 under Bruce Nail Block Specifications.

(B5) Laying

(B5a) All Bruce Mastic-Laid Blocks shall be laid in strict accordance with directions applying to the particular installation as set forth in manufacturer's "Installation Manual for Bruce Wood Block Floors." In general, installation is as follows:

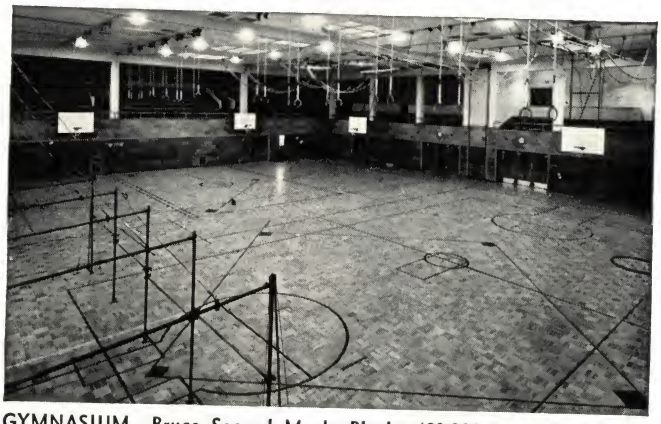
(B5b) In areas where the length greatly exceeds the width—particularly in hallways and corridors—blocks must be laid in diagonal pattern. This also applies to adjoining rooms where Blocks are laid in an unbroken stretch from one room into another. This minimizes the possible lengthwise expansion more than when the square pattern is used.

(B5c) Blocks shall be laid to a level surface bedded in Everbond X or Everbond B Mastic (see page 1) without the use of nails or screws. Mastic shall be spread to a thickness of 3/32 of an inch.

(B5d) Blocks shall be laid loose or tight, depending on the humidity conditions of the building and the condition of the sub-floor.

(B5e) Around the floor in an average size room allow a minimum expansion space of at least three-quarters of an inch (¾ in.) on each side. In larger areas, figure the expansion space on the basis of one-sixteenth of an inch (1/16 in.) for each foot of width and length. The floor must not contact any vertical surface at any point, expansion areas being required. Expansion spaces, where concealed, should be half-filled with 170° melting point asphalt. Where exposed, cork can be used.

BALLROOM—Bruce Oak Blocks in Wahkonsa Hotel, Fort Dodge, Iowa
Frank W. Griffith, Architect



GYMNASIUM—Bruce Second Maple Blocks (31,000 Sq. Ft.) in Rufus King High School, Milwaukee, Wis. G. E. Wiley, Architect

STORE—Bruce Select Red Oak Blocks (50,000 Sq. Ft.) Lowenstein's Department Store, Memphis, Tenn.

BAKERY—Bruce Second Maple Blocks (15,000 Sq. Ft.) in Omar Baking Co. Building, Indianapolis, Ind.

BRUCE SOLID OAK FLOOR PLANKS

Years ago, in the "handcraft era," floors were built of solid oak planks, rough hewn and varying in widths and lengths. Such floors characterize the architecture of Renaissance Italy, France and Spain, Elizabethan England and Colonial America. Today, Bruce Solid Oak Planks adapt this historical floor to the modern home. They conform to decorative requirements as to nicety of workmanship, but retain the "casual" effect which contributed so much to the charm of the plank floor of our forefathers. Bruce Solid Oak Floor Planks are solid, durable, genuine. They are sterling reproductions of the early "random" floorings.

Styles, Sizes, Woods and Grades

Plank floors may be laid in any of several authentic styles. They may be of varying widths; or, for the more formal interior, of equal widths. Bruce Floor Planks are available in White Oak or Red Oak (plain or quarter sawn) and Walnut; widths of planks—4, 5, 6, 7 and 8 in., with closefitting tongues and grooves on both sides and ends. They can be obtained with $\frac{1}{16}$ in. beveled edges, or with square edges. The beveled edges are of great decorative value in defining individual boards and emphasizing the widths of the planks. The use of walnut or oak plugs and butterfly keys adds a further unique and interesting touch to a Bruce Plank Floor.

3 Grades of Bruce Planks

Bruce Mansion Grade
This is the most uniform of the three distinctive grades of Bruce Oak Planks

Bruce Fireside Grade
Has a limited amount of interesting grade characteristics, such as knots, stains, streaks, etc.

Bruce Tavern Grade
Possesses a rich abundance of irregularities and character marks which add to the beauty of the finished floor

The wide surfaces of Solid Oak Planks emphasize the natural beauty of hardwood, making the floor a distinct element in room decoration.

(C) SPECIFICATIONS FOR LAYING BRUCE SOLID OAK PLANK FLOORS

(Also see General Specifications for Hardwood Floors on page 4 of this section.)

(C1) Sub-floors

(C1a) **New (Wood)**—Sub-floors shall be kiln-dried, and shall be made of 4 to 6-in. dressed stock, not less than thirteen-sixteenths of an in. ($\frac{13}{16}$ in.) thick, laid diagonally on floor joists not more than sixteen inches (16 in.) on centers. Sub-floors must present an even bearing surface and shall be double face-nailed, preferably with cement-coated eight-penny nails. Sub-floor must be dry at time of top-floor application, as any shrinkage will affect the top-floor.

(C1b) **Old (Wood) Sub-floors or Floors**—All conditions applicable to new wood sub-floors shall apply. All rotten, splintered, weakened or warped boards shall be replaced. All loose nails shall be drawn out and re-nailed.

(C2) Laying

(C2a) All Bruce Solid Oak Planks shall be laid in strict accordance with directions applying to the particular installation as set forth in the manufacturer's "Application Instructions—Bruce Floor Planks." Particular attention must be given to instructions on allowance for expansion. In general, installation shall be as follows:

(C2b) Planks shall be blind nailed through the tongue at least every twelve inches (12 in.). *(Eight inch (8 in.) spacing is recommended as this allows every second nail to enter a joist.)* In addition, planks shall be securely fastened through the face with screws or nails, not less than one such fastener to be used for each square foot of floor space. If nails are used in face fastening, indentures shall be filled with wood cement before sanding and finishing. If screws, cover with Bruce Walnut or Oak Plugs ($\frac{3}{4}$ in. diameter and $\frac{1}{4}$ in. thick) using waterproof glue.

(Note: Nails and screws of the proper size and type and wood plugs are furnished by the manufacturer, E. L. Bruce Co., *on all shipments of plank flooring.)*

Important Note: *Much greater precaution is necessary in laying Plank Flooring than is required for narrow strip flooring. The following points should be watched carefully and handled in strict accordance with the manufacturers' printed instructions. (1) In all except extremely dry climates (such as Arizona) a flat hand-scraper blade or other flat piece of steel at least one-thirty second of an inch ($\frac{1}{32}$ in.) thick must be temporarily inserted in the lengthwise joint between the strips at the point of nailing. After each nail is driven, the blade is removed and the operation repeated when the next nail is driven, and so on throughout the floor. This provides some area between the strips for later expansion and is for the purpose of avoiding cupping and buckling. (2) New construction is necessarily damp. Allow a substantial period of drying with air circulation and artificial heat before application of floor. Sub-floors, joists, etc., must be thoroughly dry. (3) Construction which permits abnormal humidity is hazardous. Basements and areas between the floor and the earth must be generously ventilated. A damp condition cannot be permitted or trouble will result.*

Laying Planks Over Concrete: *Unless conditions are ideal, Planks should not be laid over concrete. Concrete in all cases must be membrane-waterproofed according to manufacturer's printed instructions and have a substantial period of drying with artificial heat. Over the membrane apply a Sub-floor Grade of Bruce Blocks laid in mastic. These will serve as an ideal subfloor to which the Planks can be nailed and screwed in the regular manner. This method of application provides a quiet floor not subject to the drum effect resulting from the use of screeds over concrete.*

LITERATURE

Write E. L. Bruce Co., Memphis, Tenn., for "Plank Floors—as Crafted by Bruce," a 16-page A.I.A. size booklet in full colors. Also available on request: Leaflet "Historic Plank Floors for the Home of Today," and application Instructions—Bruce Floor Planks.

HARRIS MANUFACTURING COMPANY

ESTABLISHED 1898

Manufacturers of Appalachian Oak and Hard Maple Flooring

MAIN OFFICE

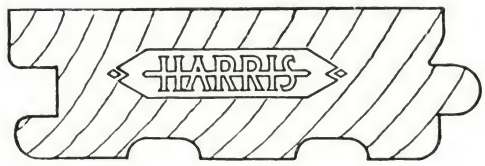
JOHNSON CITY, TENN.

METROPOLITAN NEW YORK DISTRIBUTOR

HARRIS FLOORING COMPANY

21-33 Borden Avenue, LONG ISLAND CITY, N. Y.—Telephone: STillwell 4-3650

DEALERS IN ALL PRINCIPAL CITIES



Full Size Cross Section Harris Brand Flooring
(Patent No. 2008238)

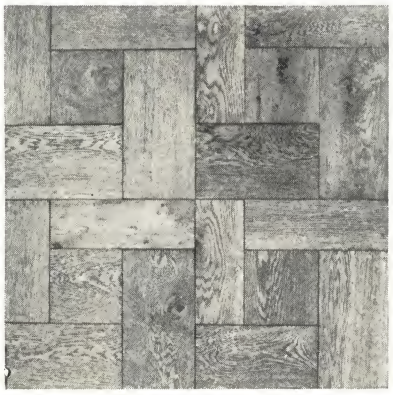
ANNOUNCING STRAIGHT-LINE FLOORING

In order to improve still further the well known quality of HARRIS BRAND FLOORING, we have installed special machinery which remove all side bends or crooks that are inherent in air and kiln-dried lumber. Manufacturing the HARRIS way produces a perfectly straight piece of flooring, "HARRIS STREAMLINE FLOORING." Straight flooring lays easier and faster which reduces the cost of laying several dollars per thousand.

All of our standard T.&G. flooring is manufactured as shown in cross-section cut above. The two channels in the back allow for three bearings on the sub-floor which more uniformly distribute the load that the flooring is to carry. Furthermore, the channels are spaced so as to equalize any absorption of moisture, thereby reducing to a minimum the possibility of cupping. We have also provided a nail groove which allows for faster and more accurate nailing. The under edges of the flooring have been rounded so as to allow for a mastic key when laid on concrete. These features are patented and are just more reasons why HARRIS BRAND stands foremost in flooring.

HARRIS STONE PATTERN FLOORING

"HARRIS STONE PATTERN" is something new in flooring. Since it is distinctive and modern in design, it has an immediate appeal to the discriminating architect, home owner and builder. We believe the accompanying illustration will demonstrate the possibilities of this floor.



Knarly and Better White Oak (Four Units)

"HARRIS STONE PATTERN FLOORING" is available in Oak, Walnut, Maple and Old English Oak.

This pattern is manufactured in 16x16-in. units $\frac{25}{32}$ in. thick, and packed in cartons. When laid, each piece comprising the unit is nailed to the underfloor.

The price is reasonable and the installation cost is no more than a first class plank flooring job.

QUALITY FLOORING AT NO EXTRA COST

"HARRIS BRAND FLOORING" is manufactured in modern flooring plants in the Appalachian Oak and Hard Maple belt, scientifically kiln-dried, and carefully milled and graded. Many designs of flooring are manufactured with a skilled staff keeping close check on quality and delivery so that no customer will have cause to worry over flooring or service. In spite of all the quality features manufactured into "HARRIS BRAND FLOORING," it costs no more than inferior and unbranded flooring.

The name "HARRIS" is cut into the back of each piece of T.&G. strip flooring at the time of manufacture for proper identification and your protection. Many architects, builders, and contractors find it advantageous to specify "HARRIS BRAND FLOORING" because of the value received grade for grade. "HARRIS BRAND FLOORING" is a permanent investment in satisfaction. Complete stocks are carried at strategic points throughout the country for prompt and economical shipment.

If you need a dependable source for flooring, or if you have problems in the selection of woods and designs, we will be pleased to co-operate with you.

A COMPLETE LINE OF FLOORING AND FLOORING SPECIALTIES

"The Harris Line"

$\frac{25}{32}$-in. Oak Flooring (tongued and grooved).
$\frac{1}{2}$-in. Oak Flooring (tongued and grooved).
$\frac{3}{8}$-in. Oak Flooring (tongued and grooved).
$\frac{5}{16}$-in. Oak Strips (square edged).
$\frac{25}{32}$-in. Oak, Maple, Beech and Walnut Parquetry.
$\frac{5}{16}$-in. Oak, Maple, Beech and Walnut Parquetry.
$\frac{25}{32}$-in. Hard Maple Flooring (tongued and grooved).
$\frac{25}{32}$-in. Beech Flooring (tongued and grooved).
$\frac{25}{32}$-in. RiBac Colonial Plank Flooring* (4 to 8 in. wide).
$\frac{25}{32}$-in. Solid Colonial Plank Flooring* (4 to 8 in. wide).
$\frac{5}{16}$-in. Solid Colonial Plank Flooring* (4 to 8 in. wide).
Diamond Blocks; Border Lines; Hardwood Specialties.
Old English (Dark Fumed) Oak Flooring and Lumber.
Stone Pattern Flooring.*
*Oak, Hard Maple, Beech, Walnut and Ash.

BRIEF SPECIFICATION

All wood flooring where indicated on the plans shall be "HARRIS BRAND FLOORING" as branded by the manufacturer, the HARRIS MANUFACTURING COMPANY, of Johnson City, Tenn. (Detailed specification furnished on request.)

"HARRIS BRAND FLOORING" is graded according to the Approved Rules and Regulations of the National Oak Flooring Manufacturers' Assn., and the Maple Flooring Manufacturers' Assn. For their catalogs, see File Index

HARRIS RiBac COLONIAL PLANK FLOORING

(RiBac (Trade Mark) Patent No. 1801093)

RiBac Planks Further Improved

HARRIS RiBac Colonial Plank Flooring consists of wood ribs, or splines, inserted and securely glued in dovetail grooves in the *back* of the plank at 8-in. intervals, at right angles to the grain of the flooring and so milled as to form an integral part of the tongue on one side and the groove on the other. Channels are cut parallel with the grain into the back of the plank, tending to equalize any absorption of moisture.

For best results, RiBac Planks should be nailed through the ribs, which are spaced 8 in. apart with the first and last rib 4 in. from their respective ends, so there will be a minimum amount of waste when laid on beams that are on 16-in. centers.

This scientific method of construction adequately reinforces the individual plank and the entire floor and provides, as well, resistance to atmospheric changes. RiBac Planks are more practical than regular solid planks and more economical than laminated plank construction. There is no veneer on RiBac planks to peel off.

RiBac Plank Flooring is somewhat flexible before installation because of the ribs in the back, thereby enabling this type of plank flooring to be laid with ease in mastic on concrete. This makes it possible for builders of steel houses and other jobs that have a concrete or steel base to use plank flooring.

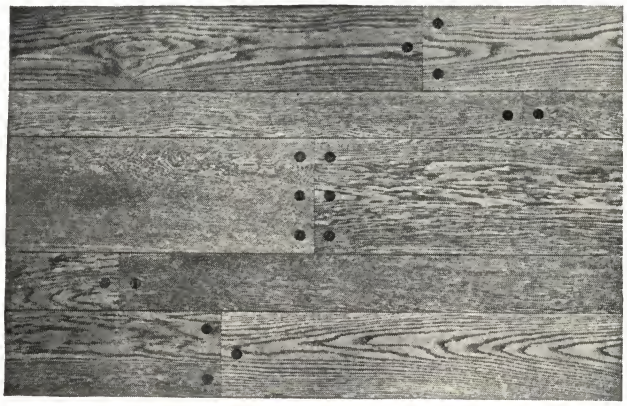
RiBac Plank Flooring is produced in all grades, in widths of 4 to 8 in. and in random lengths. It is regularly manufactured with a slight beveled edge, making a shallow V-joint when laid, but can be furnished with the conventional square edge, making a flush joint. Furnished in Oak, Old English (Dark Fumed) Oak, Hard Maple, Walnut, Ash and other woods. Send for sample and further information.

Back of Harris RiBac Showing Scientific Construction

Colonial Plank Flooring

We also manufacture regular Solid Colonial Plank Flooring, identical in specifications with the RiBac, except there are no ribs in the back of the Plank.

Plank Floor of Knarly White Oak (Solid or RiBac)



Plank Floor of Plain White Oak (Solid or RiBac)

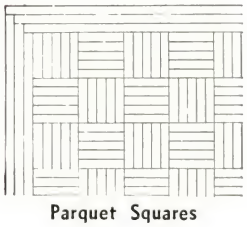
HARRIS PARQUET AND HERRINGBONE

For Nailing or Mastic Installation

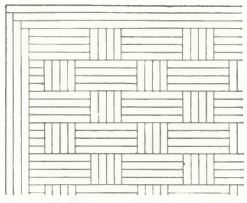
The sketches below represent a few of the popular designs available in Parquet or Herringbone, to be blind nailed or to be installed in mastic on concrete. Our Herringbone is produced from our new pattern flatback Straight-Line Flooring (see illustration on preceding page), assuring perfect matching and consequently faster laying than old style milling, whether nailed or laid in mastic. The under edges of each piece provide an adequate key for holding and taking up the surplus mastic. Herringbone in $\frac{25}{32}$-in. thickness is produced in 6¾, 9, 11¼, 13½, 15¾, and 18-in. lengths. In the Clear and Select grades, the slats in each layer of the bundle, which make the design, are toned for color.

We also manufacture Parquet Squares, produced in $\frac{5}{16}$-in. thickness and glued on heavy paper in 6, 8, 9, 10, and 12-in. squares, to be face nailed. Although designed for new installations, this thickness makes an ideal over-lay floor and is used extensively on alteration jobs.

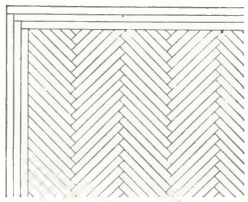
A sketch is shown of our Diamond Parquet design that makes a strikingly distinctive and modern flooring pattern, manufactured in Oak, Maple and Walnut, allowing for attractive color variations. HARRIS Diamond Parquet is produced in $\frac{5}{16}$, ½ and $\frac{25}{32}$-in. thicknesses. We will gladly send a photograph of this design and further information.



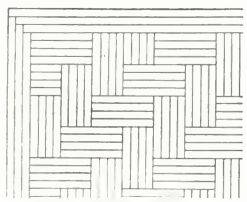
Parquet Squares



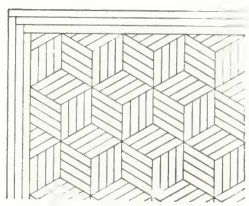
Basket Weave



Single Herringbone



French Herringbone



Diamond Parquet

MAPLE FLOORING MANUFACTURERS ASSN.

332 South Michigan Avenue, CHICAGO, ILL.

NORTHERN HARD MAPLE, BEECH, AND BIRCH FLOORINGS

Standardized, trade-marked and guaranteed as to grade and manufacture.

MFMA TRADE MARK

Slogan

Floor *with* Maple
Beech *or* Birch

GENERAL CHARACTERISTICS

Northern Hard Maple, Beech, and Birch offer a wide range of uses and color possibilities, yet in general characteristics the three are closely kindred woods.

All three are close grained, hard fibered, free from slivering and splintering, and polish under friction in a way which increases their wearing qualities.

All three have natural beauty when given a wax or varnish finish, and are suitable for use in any room of a fine dwelling, as well as for hard industrial service.

All three have a subdued grain pattern, in keeping with the changing taste, which is away from gaudiness in woods.

All three are particularly clean and sanitary, since the closeness of their grain and the smoothness of their surface afford no lodging place for germ-laden dirt.

Once laid a Northern Hard Maple, Beech or Birch floor is like a smooth, one-piece area of hardest wood because each piece is accurately side and end matched.

INDIVIDUAL CHARACTERISTICS

Northern Hard Maple—Is dense, strong, heavy, remarkably hard, supremely durable. The color of the heartwood is brownish, the sapwood is much lighter. The grain is close—sometimes curly or birdseye. Hard Maple has unusual ability to resist pointed pressure without abrasion. It takes a high polish and attractive finishes. Research work has developed heavy duty finishes and transparent stains which produce a colorful finish enhancing the natural beauty of the wood.

Northern Beech and Birch—These woods show slightly more grain pattern than Hard Maple and have more natural color. In physical properties they are close enough to Maple to be frequently used instead of Maple.

BEAUTY

Due to their leadership in wearing qualities, these three woods have sometimes been stressed for service uses, to the exclusion of any consideration of their beauty. And yet no one who has seen the mirrorlike luster of a Hard Maple dance floor can deny that such a floor has beauty.

COLOR POSSIBILITIES

Hard Maple — Shows an attractive golden hue when waxed or varnished—it is literally a "floor of captive sunlight" which mellows and ripens with passing years. The soft luster of natural finished Hard Maple flooring is demonstrated by its appearance in ballrooms, where the cushioning comfort of wood is almost universally preferred.

Research work of the past few years has resulted in the development of improved Acid Stains by which the extremely hard texture of Northern Maple, hitherto impervious to attractive color staining, is made to take a variety of delightful, transparent, permanent color finishes.

The application of these finishes brings out the delicate grain of the wood and enhances the pleasing effect of birdseyes, burls, etc., thus creating a distinctive type of beauty in wood floors.

Beech and Birch—The grain pattern of Beech and Birch, like that of Hard Maple, is a delicate tracery, without fibrous ridges. Beech and Birch take approved stains readily and evenly, so that a floor laid with either of these woods will present an attractive appearance which lasts for years.

In residential buildings, Beech and Birch are often used where dark floors are desired. Their hardness and their susceptibility to staining, places them in a class with Hard Maple for residential purposes.

MFMA GRADING RULES

Northern Hard Maple, Beech, and Birch Floorings are kiln-dried products sold in standard grades, described in accurate detail in a book of Grading Rules which may be had on application to the Association.

The standard lengths, in $\frac{25}{32}$ inch and thicker, are as follows:

MFMA First Grade: 2 to 16 feet, may contain up to 25% of 2 to 3½ feet, inclusive.

MFMA Second Grade: 1½ to 16 feet, may contain up to 40% of 1½ to 3½ feet, inclusive.

MFMA Third Grade: 1 to 16 feet, may contain up to 60% of 1 to 3½ feet, inclusive.

Hard Maple stock is a rigid requirement of the **MFMA** *Grading Rules for Maple flooring. A specification of* **MFMA** *Maple flooring assures a product made from all Hard Maple lumber. Soft Maple (acer saccharinum) flooring or a mixed species of Maple stock cannot wear equally well with all Hard (acer saccharum) Maple flooring.*

A Hard Maple main floor in the predominating store of the Carolinas—where traffic sometimes reaches 21,000 customers in a single day

Gymnasium of Bulkeley High School, Hartford, Conn.—floored with Northern Hard Maple. Frank Irving Cooper Corp., architects

SPECIAL GRADES

MFMA White Clear Northern Hard Maple, selected for color uniformity.

MFMA Brown Clear Northern Hard Maple, selected for color uniformity.

MFMA "Birdseye Figured" Clear Northern Hard Maple is specially selected stock.

MFMA Red Clear Northern Beech and **MFMA** Red Clear Northern Birch, especially selected for color.

STANDARD MEASUREMENT

Flooring ½ inch and thicker, all faces, is measured ¾-inch waste for matching.

Flooring ⅜ inch ($^{11}/_{32}$-inch) thick, all faces, is measured ½-inch waste for matching.

Jointed flooring, all thicknesses and faces, is measured ½-inch waste.

KILN DRYING

Flooring shall not be considered of standard grade unless the lumber from which the flooring is manufactured has been properly kiln dried.

END MATCHING

All flooring shall be end matched unless otherwise specified.

CUSTOM IN BUNDLING

It is the custom in bundling flooring to "give and take" (averaging the lengths) by including pieces of flooring up to 6 inches over and 6 inches under the length marked on the bundle, and to include pieces of flooring 3 inches (plus allowance for waste in end-matching) under the minimum lengths specified in the Grading Rules.

STANDARDIZATION

MFMA flooring is made to accurate specifications standardized by the Association. The Association maintains supervision over the products of its members through regular grade inspection at mills and its re-inspection service. Competent inspectors are employed for this purpose.

USES OF THE DIFFERENT GRADES

MFMA First Grade—This grade is the highest standard grade. It makes the most durable and desirable floor for any building, and is particularly suited for fine homes, apartment buildings, churches, clubs, dance floors, gymnasiums, hospitals, hotels, office buildings, public buildings, roller skating rinks, schools, stores and other buildings, where fine appearance as well as wear is desired.

MFMA Second Grade—This grade is practically as serviceable as First Grade and can be used in the same type of buildings as First, if the slight imperfections permitted under the rules are not objectionable. Such imperfections, it will be noted, have an actually pleasing effect when the wood is given a color finish as per standard formulae.

MFMA Third Grade—This grade gives excellent satisfaction in factories, creameries, granaries, mills, warehouses, workshops, or at mines, on farms, etc. It is also used in grill rooms, billiard rooms, dens, or rooms of antique design and decoration, where the desire is for the unusual rather than for the conventional.

USES OF DIFFERENT THICKNESSES

The $^{25}/_{32}$-inch thickness of Hard Maple, Beech or Birch Flooring is the most commonly used for general purposes. The ⅜-inch thickness is very satisfactory for laying over old floors but care should be taken that underfloor is dry, sound and of uniformly even surface.

The $^{33}/_{32}$-inch thickness with its ¼-inch additional wearing surface is recommended when floor is to be subjected to extraordinary strain and wear.

The ½-inch, ⅝-inch, $^{41}/_{32}$-inch and $^{53}/_{32}$-inch thicknesses are manufactured for special purposes and are readily available. Jointed flooring, also called Square Edge flooring, possesses the advantage of easy replacement in industrial floors.

THICKNESSES AND WIDTHS, NORTHERN HARD MAPLE, BEECH AND BIRCH FLOORINGS; MFMA FIRST, SECOND AND THIRD GRADES. TONGUED AND GROOVED STRIP FLOORING

Standard Thickness	Face Widths
$^{25}/_{32}$ in.	1½, 2, 2¼ and 3¼ in.
Special Thicknesses	
$^{33}/_{32}$, $^{41}/_{32}$ and $^{53}/_{32}$ in. ⅜, ½ and ⅝ in.	2, 2¼ and 3¼ in. 1½, 2 and 2¼ in.

Jointed (or Square Edge) Flooring of $^{25}/_{32}$ and $^{33}/_{32}$-in. thicknesses is made in 2½ and 3½-in. faces.

MAPLE, BEECH AND BIRCH TONGUED AND GROOVED FLOORING BLOCKS, TO BE LAID OVER CONCRETE OR WOOD SUBFLOORS IN HERRING-BONE PATTERN, IN SQUARES OR OTHER PATTERNS

Thickness and Face Width	Face Lengths
$^{25}/_{32}$x2¼ in. $^{33}/_{32}$x2¼ in.	6¾, 9, 11¼, 13½, 15¾, 13½ in.

The standard length in popular use is 13½ in.

FABRICATED BLOCKS—SQUARES AND RECTANGLES

Maple, $^{25}/_{32}$ in. thick	Maple, $^{33}/_{32}$ in. thick	Beech, $^{25}/_{32}$ in. thick
1½-in. strips 7½x7½ in., 9 x9 in.	7½x7½ in.	7½x7½ in., 9 x9 in.
2-in. strips 8x 8 in., 10x10 in.	8x 8 in., 10x10 in.	
2¼-in. strips 6¾x 6¾ in., 9 x 9 in., 11¼x11¼ in.	6¾x 6¾ in., 9 x 9 in., 11¼x11¼ in.	6¾x 6¾ in., 9 x 9 in., 11¼x11¼ in.
1½-in. strips 6 x12 in.	.....	6 x12 in.
2¼-in. strips 6¾x13½ in.	.....	6¾x13½ in.
3¼-in. strips 6½x13 in.		

Laying 42,000 ft. of **MFMA** *First Grade Maple Flooring over a diagonally laid 2-in. softwood subfloor in the State Armory, New Haven, Conn.*

HOW TO LAY MFMA FLOORING

Subfloor—The $^{25}/_{32}$-inch and thicker flooring can be laid directly on the joists or on sleepers embedded in concrete spaced no wider than 16-inch centers, but is more frequently laid on a subfloor.

For best results a subfloor made of softwood boards surfaced on one or two sides is strongly recommended.

These boards should be no wider than 6 inches, nailed ⅛-inch allowance between boards and laid diagonally to the top floor. This permits of the top floor being laid at right angles to joists or sleepers, and the use of the narrower subfloor boards prevents the development of cracks between joints in the top floor due to shrinkage in subfloor boards. It should be securely nailed. It should be dry. A cover of glazed, waterproofed and coated building paper should be laid between subfloor and hardwood floor as a protection against moisture absorption by the top floor.

Top Floor—The top flooring should not be laid until plastering and cement work are thoroughly dried and woodwork and trim are installed. In fact, the laying and finishing of the hardwood floors should be the last operation in connection with the construction of the building. As a final precaution it is strongly recommended that either in summer or winter heat be on at least 10 days before flooring is laid.

After the trim is in place, line up the first course of strips flush with the face of the baseboard which must not extend below the surface of the top floor. Nail the first course directly through that portion to be covered with the quarter round or base shoe. Do not, under any circumstances, lay the flooring tight against studding or walls. Use short piece of flooring to put against end or edge of flooring strip when driving it up.

Flooring the University of Minnesota Indoor Sports Building with 33/32-inch thickness Northern Hard Maple Blocks, bonded in mastic to concrete slab. Clarence H. Johnston, architect

ABRASIVE TESTS OF FLOORING MATERIALS

Tests conducted by the Mellon Institute of Industrial Research show comparative values for wearing qualities of Maple and non-wood materials as indicated in the table below.

The tests were made with a machine which ingeniously brought to bear on the flooring material samples an action similar to that of human foosteps. After a test period of the same duration for each material, the percentage loss by abrasion was determined.

The indentation test reveals hardness, and the abrasive test more particularly the resistance to friction.

Material	Average per cent loss	Indentation test*
Vitreous tile	4.57	0.
Marble	23.18	0.
Maple wood	23.79	0.0
Rubber	20.59	4.0
Linoleum	56.57	13.6
Oxychloride cement	50.10	0.0
Neat portland cement	16.79	0.0
Asphaltic composition	80.11	61.9
Cork tile	45.93	26.7

*Note that Maple was the only wood selected for comparative tests with vitreous tile and marble. It was untreated and without benefit of surface finish.

COMPLETE OUTLINE STANDARD SPECIFICATION FORM FOR LAYING AND FINISHING MFMA NORTHERN HARD MAPLE FLOORING

(Also **MFMA** *Northern Beech and Birch)*

ROUGH CARPENTRY

Sleepers or Nailers—Sleepers under floors shall be of 2 x 3-inch stock, and creosoted. They shall be spaced not more than 16 inches on centers, accurately leveled and anchored to the construction at not more than 24-inch intervals. The space between and beneath the sleepers shall be filled solid with concrete, as specified under "Masonry" subheading of concrete and cement work. (Ground and basement floor slabs excepted.)

Anchors for Wood Sleepers—*(This is optional)*—Anchors for wood sleepers shall be zinc coated and so designed that they cannot pull out after the concrete has set. They shall be of (annealed steel wire), (flat band type not less than 1¼ inch wide) of not lighter than 20-gauge U.S. Standard, metal.

Subfloors—*(Where subfloors are required)*—Directly over the sleepers or nailers, lay in a diagonal direction (1 x 4 S2S& CM) ( ) or (1 x 6 S1S or S2S) ( ) boards securely nailed to bearings with 8d common nails.

Floor Insulation—Lay directly over (subfloor) (sleepers and fill) one layer of glazed, coated and waterproofed building paper in accordance with the manuacturer's specifications.

FINISH CARPENTRY

Finish Floors—*(Outline Specifications)*—All finish wood floors shall be of (Northern Hard Maple) (Northern Beech) (Northern Birch) trademarked **MFMA**, of (thickness, width and grade [tongued and grooved] [jointed] strip flooring), of (give dimensions, etc., of individual blocks or fabricated blocks) in accordance with the current Grading Rules of the Maple Flooring Manufacturers Assn.

All finish strip flooring shall be laid directly over the (joists) (sleepers) (subfloors) (waterproofed paper) and securely nailed to each (joist) (sleeper) bearing. (For installation of blocks see manufacturer's specifications, furnished on application.)

Acclimation—All finish flooring shall not be stored or installed in any part of the building until after the building has been pronounced thoroughly dry by the architect or his authorized agents.

All finish flooring shall be stored in the building for at least three days under proper and protected ventilation. The temperature of the areas in which the finish flooring is to be laid and the room in which it is stored prior to installation shall not be more than 70° F. or less than 50° F.

Sanding—All wood floors shall be sanded with a power driven sander of the type that is approved by the architect. The floors shall first be swept clean and all sanding shall be done with medium coarse sandpaper with the grain, finishing up with No. 00 sandpaper to remove all standing grain or fuzz.

Finish sanding across the strip will not be permitted.

After sanding, this contractor shall sweep all wood floor surfaces to remove all dust.

Floor Protection—This contractor shall protect all finish wood floors with an approved building paper until such time as the floor finishing or painting contractor shall be ready to receive them.

LITERATURE FOR FREE DISTRIBUTION

The following booklets and folders are offered through the office of the Association, and will gladly be mailed on request, free of charge:

"**MFMA** Grading Rules and Standard Specifications, including other data of value to Architects—issued in filing pocket folder of A.I.A. file size" (May, 1935, edition).

"Hard Maple Flooring—illustrative of grades."

"Heavy duty Finishes for Maple Flooring—**MFMA** Approved."

"Grading Rules for **MFMA** Floorings—pocket size."

SECTION 11

CONTINUED ⟶

NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION

EXECUTIVE OFFICES
830 Dermon Building, MEMPHIS, TENN.

Purpose

Exponent of the oak flooring industry of the United States, the NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION serves the architectural and building professions as the accredited source for published grades, inspection, authentic specifications, technical data and approved simplified practice in specification writing.

Service Available to Architects and Specification Writers

As copyright owner of the industry's Grading Rules and their application, the ASSOCIATION maintains a comprehensive staff of inspectors. In addition to supervising grading at members' plants, these inspectors are available at the point of delivery should re-inspection be requested or when questions arise as to the relation between specifications as written and oak flooring as delivered.

Guaranteed for Grade

All oak flooring produced and shipped by members of the ASSOCIATION is guaranteed for grade, under Association rules, by the individual manufacturer. As stated on the copyrighted NOFMA label attached to the flooring bundles, NOFMA grades meet all requirements of Commercial Standards CS 56-36 as issued by the National Bureau of Standards of the U. S. Department of Commerce. This label, therefore, is the warranty mark of the maker — and the industry—which certifies Pedigreed Oak Flooring.

Architects' Specification Protective Clause

All oak flooring shall bear the copyrighted NOFMA label; shall be delivered to the premises in original, unbroken bundles and shall be according to grading rules and subject to re-inspection service of the NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION.

New Finishes

Within recent years new floor finishes have been perfected through collaboration by the ASSOCIATION's Research Department with leading manufacturers of floor finishes. Complete information is included in the ASSOCIATION's literature referred to below.

For the protection of client and architect, specify Oak Flooring which bears this Warranty Mark

Literature for Your Guidance

The "Specification Manual for NOFMA Certified Oak Floors" is an authentic reference for AIA File 19-E-9. Now in its Fifth Edition, this practical book serves as a Master Work Sheet and may be referred to in architects' specifications, drawings and details; in bids and agreements with subcontractors and general contractors, as Fifth Edition, Data Sheet A-B-C or D, listing special item numbers which shall govern the work. Copies may be had from the ASSOCIATION at the above address, together with an exhaustive handbook on the Laying, Finishing and Care of NOFMA Oak Floors.

DATA FOR THE SPECIFICATION WRITER

Subfloors—Sleepers—Nailing—Surfacing

(1) Sub-flooring (Under-flooring)

Over Joist Construction

In new buildings it is presumed there will be an under-floor, or "sub-floor," laid over the joists. Sub-flooring should be 1x4 or 1x6-in. sized, No. 1 or No. 2 *Common* grade of ordinary lumber, *and dry*—preferably kiln-dried material—laid diagonally (at 45°) and driven close but not tight. Boards should preferably be square edge and not tongue and groove or shiplap, and never wider than 6 in. Avoid, generally, the use of boards which have been used as forms for concrete work. These may be used only when sound, clean, and free of warps—and must be absolutely dry and extra-nailed. In residential work it will add greatly to the braced strength of a building to reverse the direction of the diagonal under-flooring, running the direction of the upstairs sub-flooring opposite to that downstairs.

(2) Nailing Sub-floors

The boards must be face-nailed, solidly at every bearing, with two 10d nails. All butt joints must rest on bearings. If it does become necessary to use sub-floor boards wider than 6 inches, extra nailing must be employed at every bearing—thus: For 1x8-in. boards use three 10d nails at all bearings. For 1x10-in. boards, use four nails. Under no circumstances must boards be wider than 10 in.

It is a permanent advantage to have Oak Floors laid upon sub-floor.

Plenty of Nailing—Plenty of nailing holds the floors, makes them rigid and prevents the creeping sometimes caused by shrinkage and expansion in sub-floor lumber.

(3) Sub-floors Over Concrete

Sub-floors laid on sleepers may be laid at right angles or diagonally. Sub-flooring when laid over concrete should be spaced ½ in. apart to assist ventilating and drying out the concrete or floor fill—use square edge boards only. Before laying sub-floor or finish floor over sleepers, sweep the top of concrete clean. Do not use water.

(4) Examine the Sub-floor Carefully

Repair any damage done during construction. Drive down any raised nails, and make sure floor is level, dry and clean. Use no water in cleaning.

Note: A sub-floor must be provided in all cases where the oak flooring material is less than $\frac{13}{16}$-in. thickness.

(5) Building Paper

Lay a good quality building paper over the sub-floor—the type known as 15-lb. asphalt-saturated felt, in rolls, and not thin black-sized, red rosin-sized paper or slater's felt—and extended from wall to wall, laid in place as the floor work proceeds, and lapped about 4 in. It is absolutely necessary to use building paper on the first story. It is advisable to use it upstairs as well (and must always be employed over concrete or nailing concrete).

(6) Insulation Over Heating Plant

For rooms directly over heating plant, use double weight building paper (30-lb. asphalt felt), 30-lb. asbestos felt, or standard insulating board about ½ in. thick. This will provide insulation against excessive heat which might otherwise cause cracks in the floor. The insulation can be applied, if required, on the basement ceiling, set in between the floor joists, in new or in old building.

(7) Sleepers (Screeds)

A sub-floor is absolutely essential to satisfactory Oak Floors; when omitted, the risk is entirely that of the owner or contractor. If an under-floor, or sub-floor is to be omitted, and the hardwood flooring nailed directly to wood "sleepers" or "screeds" set in or on the concrete slab, the sleepers should be spaced not more than 12-in. centers. The customary 16 and 20-in. spacing of sleepers is not recommended as good practice. Sleepers closely spaced, as above specified, compel close nailing, and that is what is needed to get a fine floor.

When a sub-floor is to be installed over a concrete slab, the sleepers may then be spaced 16 or 18-in. centers. Sleepers (or screeds) should be tightened in place. There are various approved methods, such as galvanized metal clips, expansion bolts in lead sleeves, and wire. Fastening and tightening by twisting strong wire around sleepers has proven quite effective and is a simple method often preferred. If beveled sleepers are used, depending on the floor fill to hold them in place, other fastening may be omitted. Sleepers should be wedged up level.

Sleepers, if set in concrete or fill and not otherwise held in place, must have beveled edges. Bevel not required when fasteners are used. A light-weight non-concrete floor fill is required in some cities, others omit fill. Others use cinder, concrete or mortar fill.

(8) Treated Lumber

Sleepers should be of pre-treated lumber, impregnated with an approved wood preservative. If pre-treated sleepers are unavailable, the preservative should be brushed in on all sides and ends, before putting them in place. They should be of a lumber grade equivalent to No. 1 *Common*, 2x4 in. or 2x3 in., and laid with the flat side down.

Note: When a sub-floor or under-floor is to be omitted, and if doubtful as to precise direction that the finish flooring strips are to be laid, lay sleepers at 45° diagonal, permitting finish floor to be laid in either direction.

(9) Floor Furring

Floor furring strips are sometimes used over wood sub-floor construction, when electrical conduits and piping are to be laid on top of the sub-floor. Floor furring strips of the thickness required and 1¾ in. wide, shall be spaced 10-in. centers, tacked to the sub-floor, and laid at right angles to direction of the finished flooring. The latter is nailed through the furring strips, using nails one size larger than those specified in the Nail Schedule.

(10) Floor Ventilation Very Important

Where basements are not provided, adequate provision must be made for the free movement of cross currents of air beneath the building. This circulation may be obtained by providing vents and other openings in the foundation walls.

The total area of vent opening should be at least 1½% of the first floor area, and more if possible.

STANDARD OAK FLOORING GRADES

According to the Grading Rules of the National Oak Flooring Manuacturers' Association

Quarter Sawed

Clear—The face shall be practically free of defects except ⅜ of an inch of bright sap. The question of color shall not be considered.

Bundles to be 2 ft. and up, not to exceed 20% under 4 ft. Average length 5 ft.

Sap Clear—The face shall be practically free from defects but will admit unlimited bright sap. The question of color shall not be considered.

Bundles to be 2 ft. and up, not to exceed 20% under 4 ft. Average length 5 ft.

Select—The face may contain sap, and will admit pin worm holes, streaks, slight imperfections in working or a small tight knot, not to exceed one to every 3 ft. in length.

Bundles to be 2 ft. and up. Average length 4 ft.

Square edge strip flooring is graded as above, but the Clear is bundled 3 ft. and up, average length 6 ft.; Select bundled 3 ft. and up, average length 5 ft.; No. 1 Common bundled 2 ft. and up, average length 4 ft.

Plain Sawed

Clear—The face shall be practically free of defects except ⅜ of an inch of bright sap. The question of color shall not be considered.

Bundles to be 2 ft. and up, not to extend 20% under 4 ft. Average length 5 ft.

Select—The face may contain sap, and will admit pin worm holes, streaks, slight imperfections in working or a small tight knot, not to exceed one to every 3 ft. in length.

Bundles to be 2 ft. and up. Average length 4 ft.

No. 1 Common—Shall be of such nature as will make and lay a sound floor without cutting.

Bundles to be 2 ft. and up. Average length 3 ft.

No. 2 Common—May contain defects of all characters, but will lay a serviceable floor.

Bundles to be 1¼ ft. and up. Average length 2½ ft.

OAK FLOORING SIZES, KINDS, AND USES

Suggested Uses of the Different Grades

Fine residences, apartments, hotels, clubhouses—
CLEAR Quarter Sawed — White or Red Oak
SAP CLEAR Quarter Sawed — White or Red Oak
CLEAR Plain Sawed — White or Red Oak

Fine residences, apartments, hotels, churches, schools, fine stores, clubhouses, public buildings—
CLEAR Plain Sawed — White or Red Oak

Apartments and medium price residences, hotels, schools, office buildings, stores, institutions—
SELECT Plain Sawed — White or Red Oak

} Suited to "natural" finish or any stained or fumed effects.

Dwellings and tenements, schools, stores, higher class factories, and manufacturing and loft buildings—
No. 1 COMMON Plain Sawed

} Suited to any stained or oiled effect.

Factories, manufacturing and loft buildings, warehouses, cheap tenements—
No. 2 COMMON

} Suited to any oiled effect.

STANDARD COUNTS AND WEIGHTS OF OAK FLOORING

Nominal	Actual	Counted	Weights M. ft.
25/32x2¼ in.	25/32x2¼ in.	1x3 in.	2000 lbs.
25/32x2 in.	25/32x2 in.	1x2¾ in.	2000 lbs.
25/32x1½ in.	25/32x1½ in.	1x2¼ in.	2000 lbs.
⅜x2 in.	11/32x2 in.	1x2½ in.	1000 lbs
⅜x1½ in.	11/32x1½ in.	1x2 in.	1000 lbs
½x2 in.	15/32x2 in.	1x2½ in.	1300 lbs.
½x1½ in.	15/32x1½ in.	1x2 in.	1300 lbs.
5/16x2 in.	5/16x2 in.	face count	1200 lbs.
5/16x1½ in.	5/16x1½ in.	face count	1200 lbs.

Estimating

To compute the quantity of flooring to be ordered for a given room, add to the square foot area of the room as follows:

33⅓% for 25/32x2¼ in.	33⅓% for ⅜x1½ in.
37½% for 25/32x2 in.	25% for ⅜x2 in.
50 % for 25/32x1½ in.	33⅓% for ½x1½ in.
	25% for ½x2 in.

For irregularities caused by closets, bay windows, fireplaces, etc., an additional provision of 5% should be made to cover cutting and fitting.

NAIL SCHEDULE

(Tongue-and-Groove "NOFMA" Oak Flooring Must Be Blind Nailed)

Flooring dimension, in.	Size of nails	Spacing of nails
25/32x2¼	8d light flooring nail—wire nail or steel cut casing nail—(use cut nails when possible)	10 in. apart
25/32x1½	Same nails as above	12 in. apart

Following sizes of oak flooring must always be laid on a sub-floor, and blind nailed:

½ x 2 or ½ x1½	6d bright wire casing nails	10 in. apart
⅜ x 2 or ⅜ x 1½	4d bright wire casing nails	8 in. apart

Square-edge flooring, as follows, to be face-nailed—through top face—instead of blind nailed:

5/16 x 2 or 5/16 x 1½	1⅛-in. barbed wire flooring brad No. 16 heads countersunk and puttied	2 nails every 7 in.

NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION

"NOFMA" FLOORING IN BEECH, BIRCH AND HARD MAPLE

In addition to NOFMA Certified Oak Flooring, members of the NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION also produce Beech (Fagus Grandifolia), Birch (Betula Lutea) and Hard Maple (Acer Saccharum) Flooring.

Identification—The trade name NOFMA applied to Beech, Birch and Hard Maple Flooring signifies uniformity in species, grades, sizes and highest standard of excellence in seasoning and processing.

TESTS BY UNITED STATES FOREST PRODUCTS LABORATORY

Technical Bulletin No. 479 — Issued September, 1935

	Specific gravity			Hardness: Load required to embed a 0.444 inch ball to ½ its diameter. End	Side
Fagus Grandifolia ("NOFMA" Beech)	Green 54% moisture content .56	Air dry 12% moisture content .64	Oven dry .67	1590 lbs.	1300 lbs.
Betula Lutea ("NOFMA" Birch)	Green 67% moisture content .55	Air dry 12% moisture content .62	Oven dry .66	1480 lbs.	1260 lbs.
Acer Saccharum ("NOFMA" Hard Maple)	Green 58% moisture content .56	Air dry 12% moisture content .63	Oven dry .68	1840 lbs.	1450 lbs.

Emphasis is put upon the fact that while "Local growth conditions do have a marked effect on quality, yet geography in itself is a poor index of growth conditions, and the Forest Products Laboratory in its years of testing and research is inclined to minimize the importance or reliability of adhering strongly to state or regional distinctions."

NOFMA Beech, Birch and Hard Maple Floors have long since demonstrated inherent qualities which readily withstand abuse and are at the same time susceptible of maintenance of the beauty that is characteristic of each.

It is well to consider conclusions of the Forest Products Laboratory or Technical Bulletin No. 479 which states:

"In considering the causes of variation in properties of wood, it may first be noted that many factors affect the growth of trees. Such features of environment as soil, soil moisture, climatic conditions, and competition for light and food, vary widely, within small areas, and are subject to further variation from one period to another during the life of the tree. Their effect is seemingly of greater importance than geographical location within the normal range of a species. This is indicated by the finding of significant differences in strength properties between samples from adjacent areas, among trees grown within a few yards of each other and between the inner and outer portions of the same tree and the observation that samples from widely separated regions may be very similar."

Official Grading Rules

First Grade—Shall have the face practically free of all defects, but the varying natural color of the wood shall not be considered a defect. Standard lengths in all widths in this grade shall be trimmed 2 to 16 ft., as the stock will produce; the proportion of lengths 2 to 3½ ft., inclusive, shall be what the stock will produce up to 25%.

Second Grade—Will admit of tight, sound knots and slight imperfections in dressing, but must lay without waste. Standard lengths in all widths in this grade shall be trimmed 1½ to 16 ft., as the stock will produce; the proportions of lengths 1½ to 3½ ft., inclusive, shall be what the stock will produce up to 40%.

Third Grade—Must be of such character as will lay and give a good serviceable floor. Standard lengths in all widths in this grade shall be trimmed 1 to 16 ft., as the stock will produce; the proportion of lengths 1 to 3½ ft., inclusive, shall be what the stock will produce up to 60%.

Special Grades—First Grade White NOFMA Hard Maple is special stock, selected for uniformity of color. It is almost ivory white and is the finest grade of NOFMA Hard Maple Flooring that can be produced.

First Grade Red NOFMA Beech and NOFMA Birch are special grades produced from all red-faced stock, and are specially selected for color. The color is rich, being a soft tint which lends to these two woods an individuality found in no other species.

Inspection

Integrity of inspection, correct seasoning, manufacture and grades essential to the protection of the owner, architect and contractor, is maintained by NOFMA staff inspectors, supervising at point of production.

STANDARD SIZES, COUNTS AND WEIGHTS

Nominal	Actual	Counted	Weights M ft.
25/32x3¼ in.	25/32x3¼ in.	1x4 in.	2250 lbs.
25/32x2¼ in.	25/32x2¼ in.	1x3 in.	2000 lbs.
25/32x2 in.	25/32x2 in.	1x2¾ in.	2000 lbs.
25/32x1½ in.	25/32x1½ in.	1x2¼ in.	2000 lbs.
¾x2 in.	¾x2 in.	1x2½ in.	1000 lbs.
⅝x1½ in.	⅝x1½ in.	1x2 in.	1000 lbs.

SPECIAL THICKNESSES

Nominal	Actual	Counted	Weights M ft.
17/16x3¼ in.	33/32x3¼ in.	5/4x4 in.	2400 lbs.
17/16x2¼ in.	33/32x2¼ in.	5/4x3 in.	2250 lbs.
17/16x2 in.	33/32x2 in.	5/4x2¾ in.	2250 lbs.

Above tongued and grooved and end matched.

JOINTED FLOORING—i.e., SQUARE EDGE

Nominal	Actual	Counted	Weights M ft.
25/32x2½ in.	25/32x2½ in.	1x3 in.	2250 lbs.
25/32x3½ in.	25/32x3½ in.	1x4 in.	2400 lbs.
17/16x2½ in.	33/32x2½ in.	5/4x3 in.	2500 lbs.
17/16x3½ in.	33/32x3½ in.	5/4x4 in.	2600 lbs.

Note: NOFMA Beech, Birch and Hard Maple Flooring is bundled by averaging the lengths. A bundle may include pieces from 6 in. under to 6 in. over the nominal length of the bundle. No piece shorter than 9 in. admitted.

The percentages under 4 ft. referred to above apply on total footage in any one shipment of the item.

¾-in. allowance shall be added to the tongue on the end matching when measuring the lineal length of each piece of NOFMA Beech, Birch and Hard Maple Flooring.

Technical Literature

Complete Grading Rules to govern in specification writing and including rules governing *re-inspection* will be mailed on request. Address NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION, Dermon Building, Memphis, Tenn.

SECTION 11

CONTINUED ⟶

WOOD-MOSAIC CO., Incorporated

ESTABLISHED 1883

Manufacturers of Hardwood Flooring

GENERAL OFFICES

LOUISVILLE, KY.

NEW YORK OFFICE, 103 Park Avenue

CANADIAN PLANT: WOOD-MOSAIC, LTD., WOODSTOCK, ONT.

PARKAY Ready-Finished Hardwood Floors

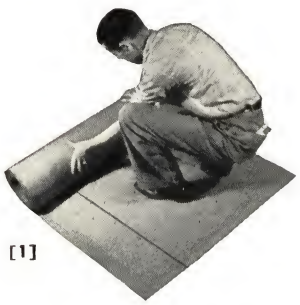
PARKAY Ready-Finished Hardwood Floors are manufactured by Wood-Mosaic Company whose experience in designing and manufacturing fine hardwood floors extends over a period of fifty-five years. PARKAY Floors are composed of solid hardwood blocks of standard 5/16-inch thickness, assembled in basket-weave pattern and embedded in a semi-pliable grill. They are fully covered by patents.

Pre-fabricated and Pre-finished

All PARKAY Hardwood Floors are pre-fabricated and pre-finished at the factory thus assuring the finest, most uniform and durable finish obtainable. Selections may be made from finished sample sections available for preliminary inspection in the rooms to be floored.

Ease of Installation

PARKAY Floors are installed as quickly and easily as the laying of a carpet and without the noise, dust, litter, delays and unpleasant odor of filler and varnish which usually accompany the laying of regulation hardwood floors. The blocks are assembled in convenient 2-by-6-foot sections and are packed in easily-disposed-of cardboard cartons. The sections are accurately matched and can be perfectly fitted to any size or shape of room without the waste involved in other types of flooring.



[1]

Low Cost

PARKAY now makes available to owners of residences, apartments, public and semi-public buildings the deep rich tones and exquisite texture of genuine hardwood floors at no more than the cost of artificial and imitation floor coverings.

No Damage During Construction

In buildings under construction, PARKAY Floors have the distinct advantage of being laid after all other construction and installation work has been completed, thus protecting their fine finish against marring by heavy fixtures and dulling by plastering and decorating.

Laid Over Any Good Sub-floor

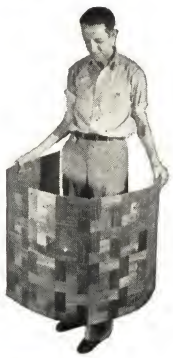
PARKAY Floors may be laid over old or new sub-floors—wood or concrete—and can be used as soon as installed.

Economical to Maintain

Being genuine hardwood, PARKAY Floors resist wear and the imprinting of heels and furniture. As in the case of any other well-finished, tight-fitting hardwood floor, their fine lustre is easily preserved by a dust mop and an occasional waxing.

Kinds of Wood

PARKAY Floors are available in light and dark oak, walnut and teak.



[2]

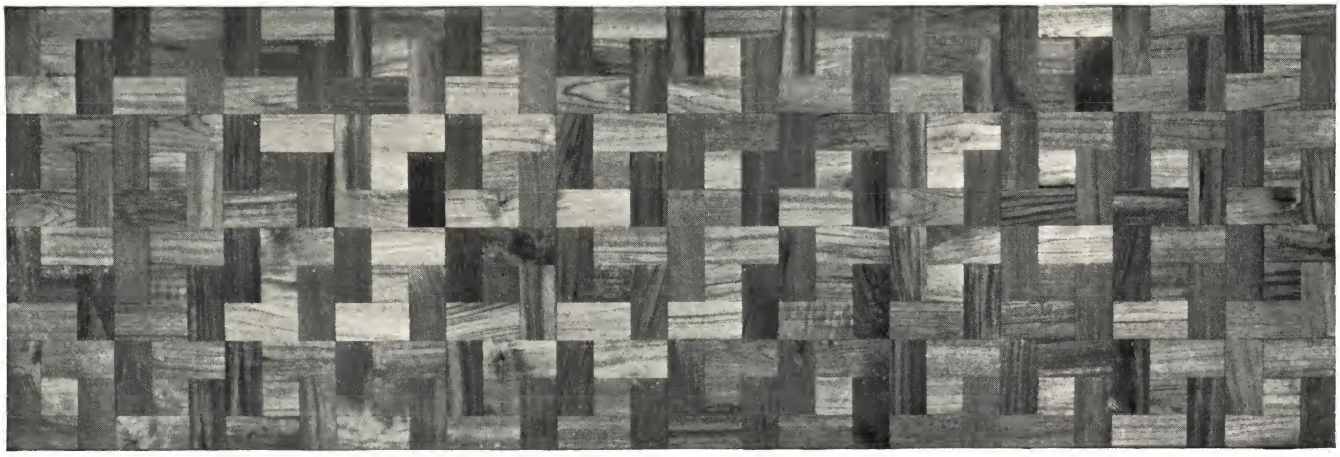
[3]

[1] *Old floor is first covered with a layer of felt securely affixed by floor paste.*

[2] *The 2x6-ft. sections of Parkay are removed from the cartons as needed.*

[3] *After matching and fitting, sections are permanently set in Parkay special adhesive.*

[1]



ARCHITECTS' SPECIFICATIONS FOR PARKAY FLOORS

General

This branch of the work shall consist of the furnishing of all labor, materials and equipment necessary to install in a complete manner PARKAY Floors manufactured by Wood-Mosaic Company, Louisville, Ky., as hereinafter specified.

Flooring Contractor

This contract shall be carried out by an experienced floor-laying contractor authorized to install PARKAY Floors and shall be subject to the approval of the architect.

Sub-floor

The contractor shall examine the sub-floor surfaces before starting his work and shall see that they are level, smooth, dry and in a proper condition to receive finished flooring. Any defects in the sub-floor shall be reported to the architect for correction prior to the installation of PARKAY.

Base Boards, Plinths, Etc.

All base boards, plinths, etc., shall be held ⅜-inch above the sub-floor to allow PARKAY to pass under them.

Installation

PARKAY Floors shall be installed after all other work in the area has been completed as they are ready for use immediately upon laying.

Special PARKAY K-B 1½-pound lining felt shall be cemented to the sub-floor with linoleum paste and well rolled. The PARKAY Floor shall be cemented directly to this felt with special PARKAY adhesive and the completed job shall be rubbed lightly with steel wool and waxed. All materials and methods used shall be in accordance with the manufacturer's written instructions.

Finally

All work shall be in strict accordance with these specifications and shall be subject to the approval and acceptance of the architect and owner.

8 A. M.

View of dining room with old, worn floor of yellow pine. Note cracks, loose, dust-collecting joints and uneven boards. This photograph was taken just as the PARKAY Ready-Finished Hardwood Flooring was being delivered in neat, compact, easily-disposed-of, cardboard cartons.

Noon

A few hours later. Same room transformed by PARKAY Ready-Finished Hardwood Floor — completely installed over old floor and ready for use. Cost: No more than that of *imitation* wood floor covering. A *genuine* hardwood floor of smooth, tight-fitting, highly-finished walnut.

WOOD-MOSAIC CO., INCORPORATED

FINE HARDWOOD FLOORS IN STANDARD AND SPECIAL DESIGNS

Authentic Period Designs

Mastic Wood Blocks (for fireproof buildings)

Parquetry

Standard Strips and Squares

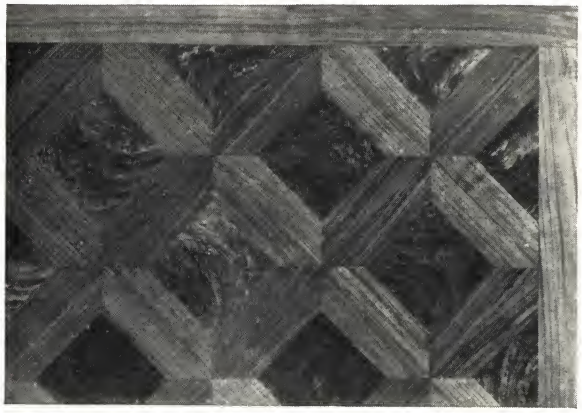
Herringbone Designs

Domestic or Foreign Woods

Wood-Mosaic Solid Teak Herringbone Floor (350,000 square feet) Laid in Mastic in the Edison Institute Museum in Greenfield Village, Dearborn, Mich.
Robert O. Derrick, Inc., Architects
Patterned and Installed by Cincinnati Floor Company.

Experience

Wood-Mosaic has been manufacturing fine hardwood flooring for over half a century. Representative installations may be seen in many prominent public buildings and private homes throughout the United States and Canada.



Monticello Pattern with Centers of Figured or Burl Walnut and Frames of Striped Walnut

Co-operation

To the architect, Wood-Mosaic offers its complete facilities for designing floors especially adapted to individual requirements and for selecting reliable floor-laying contractors capable of handling all phases of installation. Photographs and literature describing a wide variety of Wood-Mosaic flooring are available on request.

Specifications

Detailed specifications covering every type of Wood-Mosaic flooring, consistent with the specific requirements of each project, will be promptly furnished.

Period Flooring

Wood-Mosaic introduced most of the fine period flooring designs now found in America. Usually of English or French origin, these designs were selected by our own staff and represent either adaptations or faithful reproductions of many of the classic European examples.

Designs

The exquisite *Fontainebleau pattern,* appearing in the Fontainebleau Palace and other famous buildings of France, is available in quartered white oak (as in the original examples), in walnut, teak or Wood-Mosaic's special seasoned-brown Gothic oak.

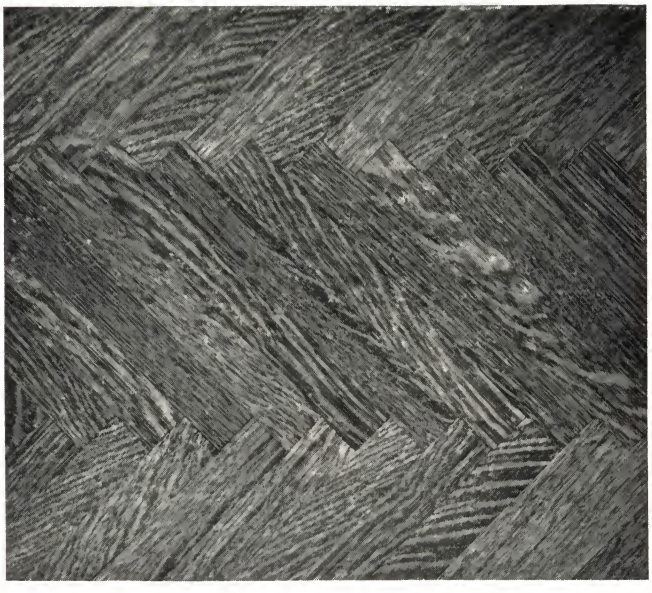
Fontainebleau Design in Antique Walnut

Herringbone Floors of Plain White Oak in Foreground; Fontainebleau Design in Background

The Monticello pattern, a true Georgian design and exact replica of the parquetry floors in Thomas Jefferson's historic Virginia mansion, is produced in burl or striped walnut, in curly or rift-sawn oak and in many other handsome combinations of woods.

Wood-Mosaic's *solid Colonial decking board floors,* rough cast and of random widths, are faithful counterparts of those in the Queen Elizabeth banquet hall in the castle at Carnarvonshire, Wales. Natural variations in texture and tone have been retained; patches and plugs, with or without crack lines, have been studiously reproduced. Much the same effect is obtained in Wood-Mosaic's *laminated Colonial flooring* made of three-ply quartered or plain white oak with each layer held securely in place by special waterproof hydroplane glue thus insuring a uniformly smooth surface. Also available in walnut, teak and other foreign and domestic woods.

In addition to these and other authentic patterns, such as *Marie Antoinette, Bordeaux, Haddon Hall and French herringbone,* Wood-Mosaic manufactures *squares and regular herringbone* for nailing or laying in mastic directly on concrete.



Herringbone Design in Clear Quartered White Oak. Can be Nailed or Laid in Mastic

Solid Colonial Decking with Boards of Random Widths Showing Knots, Patches and Natural Variations

Mastic Wood Block

Pioneer of *mastic wood-block flooring* in America, Wood-Mosaic manufactures their period designs in the special fireproof construction required for laying in mastic over concrete as well as for nailing. All basic principles in construction, developed in our own and European experiences and essential to permanently successful installations, are strictly adhered to in manufacture. Wood blocks, for laying *separately,* have flat backs for full-surface bearing on concrete; all are tongued and grooved; all have ample mastic grooves entirely around backs.

We shall gladly mail you a copy of our 8½x11-inch, 24-page book, "Wood-Mosaic Mastic Wood-Block Flooring," which lists many outstanding installations and gives complete details of designs, construction and method of laying this space- and cost-saving type of floor.

CARTER BLOXONEND FLOORING CO.

TELEPHONE
Victor 4809

902 Walnut Street, KANSAS CITY, MO.

SALES OFFICES

NEW YORK, N. Y., 501 Fifth Avenue—Telephone, Murray Hill 2-0558
WASHINGTON, D. C., 906 Chandler Building—Telephone, District 0414
CHICAGO, ILL., 332 South Michigan Avenue—Telephone, Harrison 6491
BOSTON, MASS., 250 Stuart Street—Telephone, Hancock 0883
DETROIT, MICH., 12622 Hamilton Avenue—Telephone, Longfellow 4550
AGENCIES IN PRINCIPAL CITIES

Bloxonend—Block Flooring—All Wood

Bloxonend is the trade name for a carefully engineered composite wood flooring possessing characteristics which render it unique and unsurpassed where durability, lasting smoothness, resilience and safety are desirable. It is the original strip type wood block flooring and millions of square feet have been installed since 1916 in factories, post offices, freight houses, bakeries, gymnasiums and handball courts, school shops, publishing plants, loading docks, and all locations subjected to trucking (hand or power) or concentrated footwear. *A special grade is manufactured for gymnasiums and courts.*

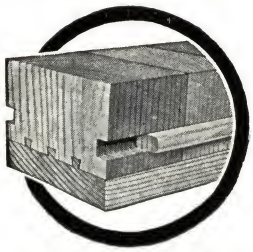


Fig. 1. End View of 8-ft. Bloxonend Section

Advantages—The use of Bloxonend insures a durable, quiet, resilient, non-slip floor which practically eliminates repair costs, speeds up trucking and increases operating efficiency. Bloxonend absorbs vibration, insulates and affords a soft bed for tools or materials dropped. It is slow wearing because the tough fibre ends are presented to wear; smooth wearing for the same reason and because the entire floor is formed into a compact, composite unit with no loose blocks to kick out or break the regularity of the surface. Bloxonend is clean, attractive, sliver and splinter proof, does not cup or warp and is adaptable to any type of construction—steel, concrete or wood, new or old. In severest service it can be resurfaced (by sanding) 20 times or more.

Construction—No other block floor has the permanent smoothness and resilience that is obtained with Genuine Bloxonend. Manufactured in our own plant in flooring strips approximately 8 ft. long (Fig. 1). Kiln dried blocks of selected yellow pine are securely locked endwise to horizontal baseboards with three dovetails, thus presenting end of grain to wear and forming flooring strips which are accurately milled to uniform size and grooved for heavy wood splines. The end-grain surface of Bloxonend resists abrasive wear; the baseboard to which the blocks are dovetailed provides tensile strength and insures a smooth surface. *The base is the backbone of Bloxonend.* It is flexible enough to follow the general contour of the slab but sufficiently rigid to prevent any irregularities in the slab reflecting in the finished surface. Heavy wood splines are used to keep flooring sections in alignment. Special nails come positioned in countersunk bores at 16-in. intervals in the edges of the strips for lateral nailing. Thus the blocks are securely anchored in the floor—by dovetailing to base, by heavy wood splines and then by lateral nailing. Durability and permanent smoothness is guaranteed by this construction.

Size—Standard sections measure 2⅞ in. thick by 3½ in. face, in lengths averaging nearly 8 ft. Weight 7½ lbs. per sq. ft.

Specification for Factory Service

Over Concrete, Lateral Nailing, Standard (Fig. 2)—The finish floors in.....shall be Genuine Bloxonend manufactured and installed by Carter Bloxonend Flooring Co., Kansas City, Mo., or an accredited representative. Flooring shall be made of selected yellow pine, presenting an end-grain wearing surface, and furnished in lengths averaging over 7 ft. 6 in. with small kiln-dried blocks locked to horizontal baseboards with three dovetails. These composite flooring strips shall be grooved in the sides for heavy wood splines. Cement coated nails shall be positioned along spline groove 16 in. on centers for lateral nailing. Concrete base heretofore specified, must have been wood floated to a true level and smooth surface by the General Contractor and left 2⅝ in. below finish floor level. On all ground floor slabs, except where integral waterproofing is specified, a standard waterproofer shall be applied by others before Bloxonend is laid. Cork or other approved expansion joints of approximately 2 in. shall be applied at walls and columns for sealing, expansion and equalization.

Fig. 2. Laying Bloxonend Directly Over Concrete Slab by Lateral Nailing in Factory Service

Treatment

For dry locations, Bloxonend is treated with our standard dampproofer which is odorless and does not discolor the wood. *For wet locations,* we recommend our treatment with a highly refined creosote oil of great toxic value, yet clean enough to be used in many places where ordinary creosote would be objectionable.

Write for detailed information.

Specification for Gymnasium Service

Over Concrete, Standard (Fig. 3)—Gymnasium shall be floored with Genuine clear face dampproofed Bloxonend manufactured and laid by Carter Bloxonend Flooring Co., Kansas City, Mo., or an accredited representative. Flooring shall be laid at right angles on and lateral nailed over 1x4 in. S2S yellow pine strips furnished by Flooring Contractor. Strips shall be placed on 12-in. centers on smooth wood-floated slab furnished by General Contractor. Slab shall be left 3⅜ in. below finish floor line. Expansion joints at walls and other obstructions shall be filled with corkboard and covered with wood moulding (or with angle iron wall protector furnished and installed by General Contractor) securely attached to wall only. Flooring shall be sanded smooth and finished with one coat of primer and two coats of Bloxonend Finish by this Flooring Contractor.

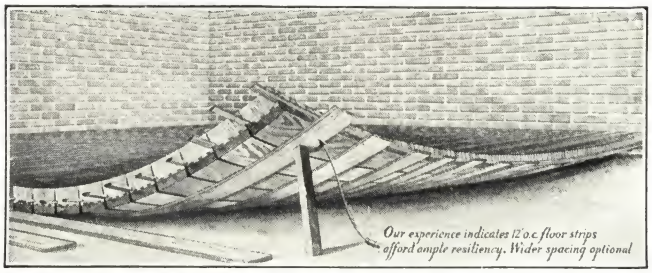


Fig. 3. Bloxonend Will Not Cup or Warp—Always a "True Bounce" Floor, and Laid in This Manner, Furnishes Maximum Resilience so Greatly Desired in Gymnasiums

Tite-Blox Flooring

We are now manufacturing a lower priced end-grain, strip block flooring—metal bound—for industrial work (not gymnasiums) where the service is mostly trucking and the comfort of resiliency is only a minor consideration.

This floor is made of the same size blocks as are mounted on the base of standard Bloxonend, practically 2 in. deep. It cannot be lateral or toenailed successfully and can only be laid in mastic.

The wearing quality of this floor is equal to that of any floor of this type.

THE JENNISON-WRIGHT COMPANY

Manufacturers of Kreolite Wood Block Floors

2480 Broadway, TOLEDO, OHIO

TREATING PLANTS: TOLEDO, OHIO, and GRANITE CITY, ILL.

BRANCH OFFICES

NEW YORK CHICAGO CLEVELAND DETROIT BOSTON PHILADELPHIA ST. LOUIS ALBANY PITTSBURGH, PA.

TORONTO, ONTARIO, CANADA

Products and Services

KREOLITE WOOD BLOCK FLOORS.

Also Creosoted Timbers, Cross Ties, Piling, Creosote Oil, Coal Tar Pitch, Kreolite Termite Exterminator, etc.

THE JENNISON-WRIGHT COMPANY maintains a Construction Department to handle or supervise the installation of Kreolite Wood Block Floors.

Kreolite Wood Block Floors

Kreolite End Grain Floors are constructed of several varieties of wood blocks which provide a specific type of floor for each service condition encountered.

These woods and the method of treatment are as follows:

Class I—Kreolite *Separate* End Grain Yellow Pine Blocks.

Class II—Kreolite *Separate* End Grain Mountain Oak Blocks.

Class III—Kreolite Flexible *Strip* End Grain Yellow Pine or Fir Blocks.

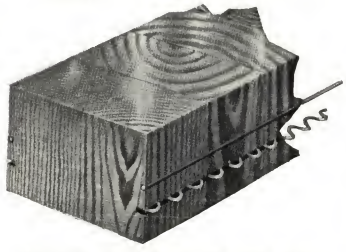
Classes I and II blocks are impregnated under pressure with Kreolite Creosote oil or Kreolite Odorless Antiseptic Mineral oil, as desired.

Class III blocks are impregnated with a colorless and odorless preservative that does not stain the wood; they are also impregnated with waterproof Kreolite oil, when desired.

KREOLITE
TRADE-MARK

Kreolite Grooved Block
For dry heated conditions

Kreolite Kountersunk Lug Block
For use under wet conditions where the factor of expansion is to be encountered; also to offset slipperiness on grades



Kreolite End Grain Flexible Strip Wood Block

Specifications for Installing Kreolite Yellow Pine Block Floors—Class I

Blocks—Kreolite Join-Tite Grooved Wood Blocks shall be used wherever the floors are subjected to dry conditions, and Kreolite Kountersunk Lug Wood Blocks where the conditions are wet or considerable moisture is encountered. They shall be —— in. in depth, approximately 3 or 4 in. in width, and may vary from 4 to 8 in. in length.

They shall be manufactured by THE JENNISON-WRIGHT COMPANY of Toledo, Ohio, and laid according to the following specifications, under the direction of the manufacturer's superintendent.

Concrete Foundation—The blocks shall be installed on a concrete base, which shall be finished smooth, exactly the depth below the finished floor level corresponding with the depth of the block used. Care must be taken to see that there are no projections in the concrete that will form an uneven bearing for the blocks.

Kreolite Koncrete Coating—After the concrete has thoroughly dried out, it shall be swept clean and given a thin, even coating of Kreolite Bitumen, not exceeding ⅛ in. in thickness. The coating shall be allowed to harden before laying the blocks and shall not be applied over 20 ft. in advance of the block laying.

Laying the Blocks—Upon the base, as above prepared, the blocks shall be laid tightly together, with the grain vertical; the courses of the blocks shall be kept straight and parallel, starting from one side of the building and carried through to the other side; all joints shall be broken by a lap of at least 2 in. In truckways, and whenever possible, the blocks shall be laid with their length at right angles with the line of traffic.

Expansion Joints—Against the walls on all sides of the floor as well as around all columns and other obstructions, a bituminous expansion joint 1 in. in width shall be formed.

Application of Kreolite Bituminous Filler—After the blocks have been laid in place and brought to as true and level a surface as possible, the joints between the blocks shall be filled with Kreolite Bituminous Filler applied at a temperature of not less than 350° F.

The filler shall be applied by flushing over the surface of the floor, using a rubber-edged squeegee to force it into the joints. Care must be taken to see that the filler penetrates the full depth of the blocks and that the joints are completely filled at the time of application.

Kreolite Mountain Oak Block Floors—Class II

For extremely heavy traffic, aisleways and floors subject to abnormal abuse, we recommend Kreolite Mountain Oak Blocks treated and laid in accordance with the above specifications.

Specifications for Kreolite Flexible Strip End Grain Wood Block Floors—Class III

Kreolite End Grain Strip Wood Block Flooring shall be assembled in strips 2 ft. to 8 ft. long, 1, 1½, 2 or 2½ in. in depth parallel to the grain of the wood, and approximately 3½ in. in width. The flooring shall show all end grain on the top and bottom surfaces. The individual blocks making up the strips shall be manufactured from properly dried Southern Yellow Pine or Fir not over 3x4 in. in cross sections, with each block bonded by galvanized steel wire trusses embedded within the side surfaces of the strips, and milled for tight fitting crimped wire splines. The assembled strips shall be dressed square and true to accurate dimensions on the wearing surface and two sides, and impregnated with a colorless and odorless preservative to protect the floor against absorption of moisture.

When laid, each strip shall be interlocked to the adjoining strip by tight fitting galvanized crimped steel wire splines continuous at least 7 in. across end joints.

The concrete slab shall be smooth, dry and clean when the floor is laid and shall be primed with Kreolite Hercules Priming Oil and given a thin, uniform bedding coat of Kreolite Hercules Bituminous Cement. Expansion joints 1 in. in width shall be formed around all columns and against all walls.

Laying generally shall be in accordance with the instructions of the manufacturers. After the strip flooring is laid, it shall be cleaned free of dirt and given a penetrating coat of Kreolite Sealkote Filler.

MANUFACTURERS BLOCK FLOORING CORP.

Wholesale Distributors of Mastic-set Wood Flooring

1343 H Street, N. W., WASHINGTON, D. C.

Telephone, National 3922

REPRESENTATIVE AND MANUFACTURING CONNECTIONS

BAY CITY, MICH., Kneeland-Bigelow Company
CINCINNATI, OHIO, M. B. Farrin Lumber Co.
DETROIT, MICH., Storm Flooring Co. of Mich., Fisher Building
GLADSTONE, MICH., Robbins Flooring Co.
NEW YORK, N. Y., Storm Flooring Co., 2500 Park Avenue
NEWBERRY, MICH., Robbins Flooring Company
RHINELANDER, WIS., Robbins Flooring Company

Following modern trends in building, we have developed a number of improved types of flooring for setting in mastic. *Five* are mentioned herewith.

Responsibility

Our mills and representatives are nationally known, long experienced and thoroughly responsible. We have floorlaying connections in the principal cities.

Floors with "Backbone"

At right is shown an unretouched photograph illustrating the resistance which "Ironbound" Flooring offers to swelling as compared with standard undercut flooring. Test panel at left is "Ironbound." The *square-cut sides and centered spline* of "Ironbound" flooring *(see detail below)* gives the "backbone" necessary to withstand humidity.

Unique Construction

This *balanced construction* is found only in our floors. Note also the *flat backs* which give 50% greater mastic bonding than hollow-back stock.

Wide Use

"Ironbound" Floors have been laid successfully in over 35 states. List of jobs on request.

Those Who Test, Buy "Ironbound"

Mastics and Finishes

As accessories to our various types of floors, we have also developed a full line of mastics and finishes.

Our "Ironbound" Mastic is composed of high-grade asphalt, stabilized with fiber to prevent "puddling" and seepage. Our "Corkushion" Mastic contains 50% of pure shredded cork to prevent contact of the flooring with hard concrete. Our "Ironbound" Leveling Compound is ideal for smoothing rough under floors. Our "Ironbound" Primer, "Ironbound" Finish, and "Ironbound" Wax, are special products developed for use with our floors.

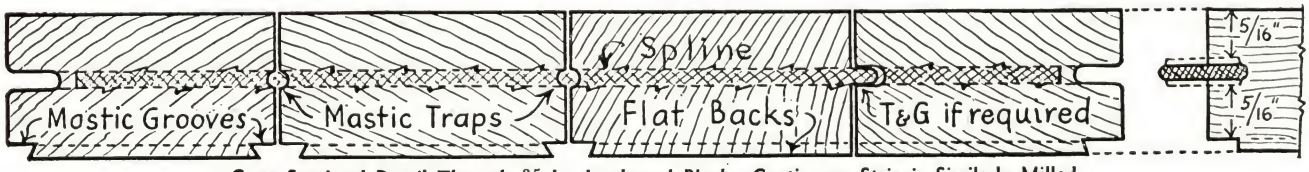
Sizes and Kinds

"Ironbound" Blocks are made in oak and maple, in standard flooring grades. Thicknesses—$^{25}/_{32}$ and $^{33}/_{32}$ in. Sizes—6¾x6¾ in., 9x9 in. and 10x10 in. Also in rectangles for "block herringbone."

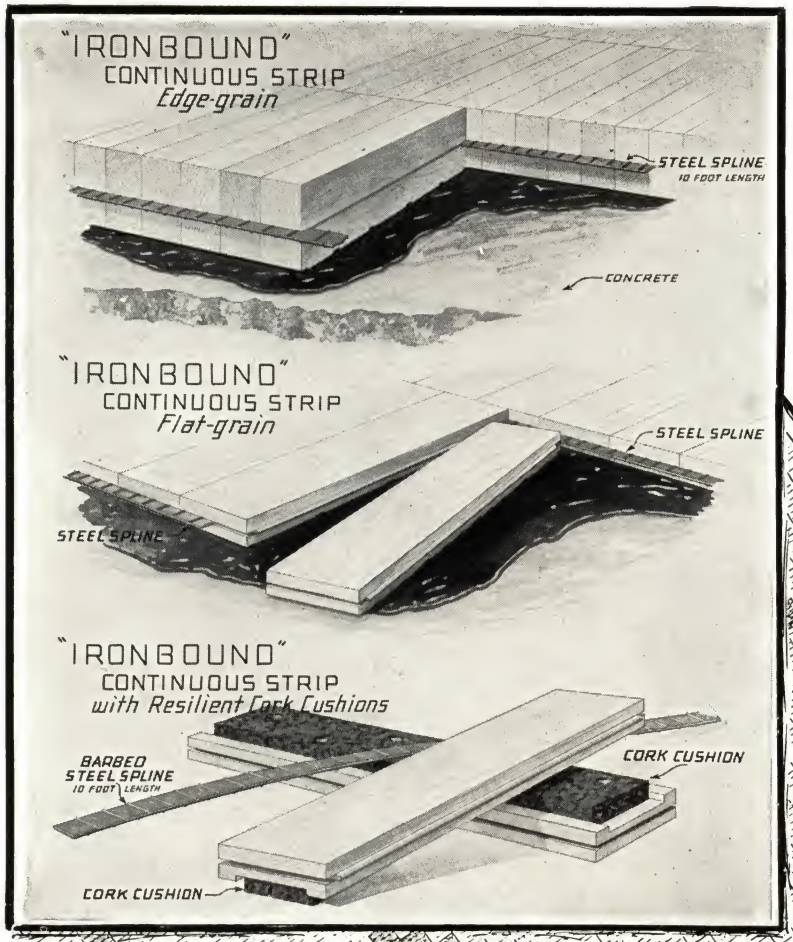
"Allwood" Blocks

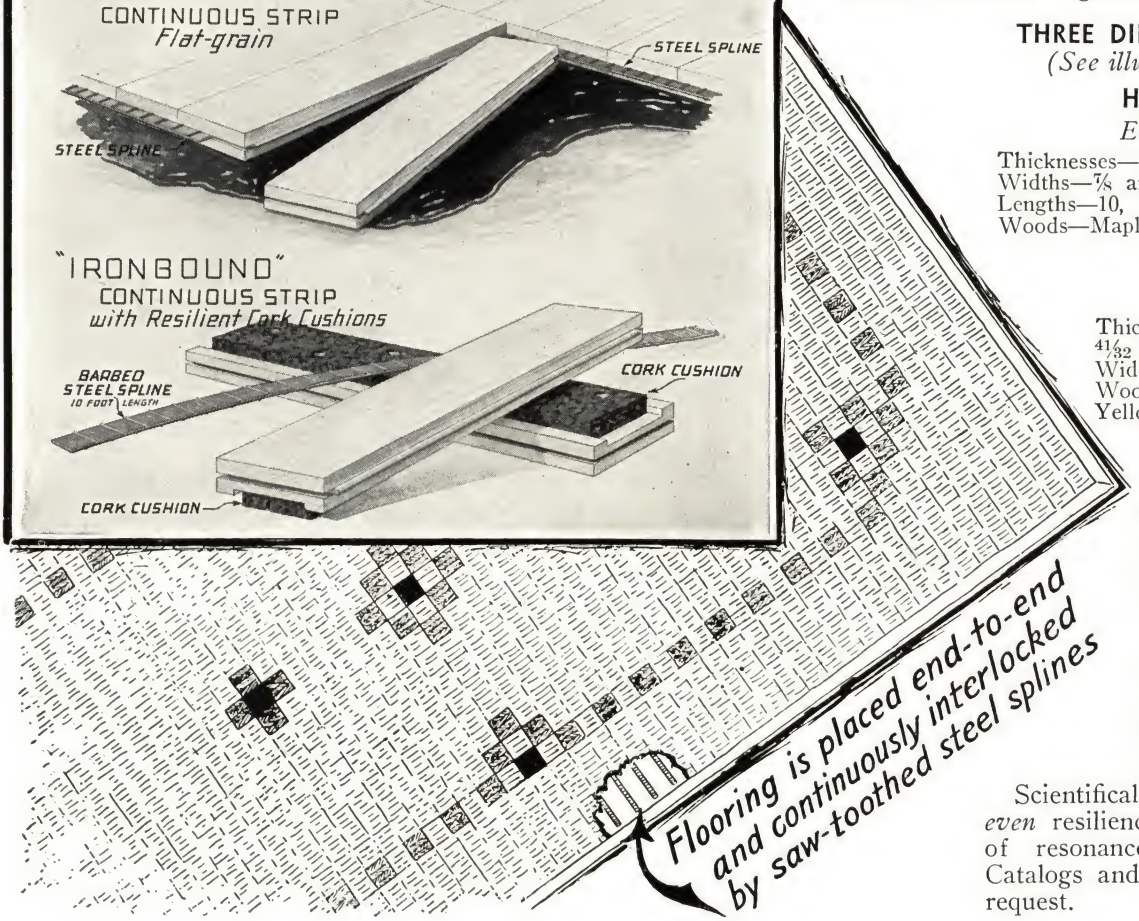
To meet a demand for blocks which may be laid more rapidly than those with steel splines, we also offer *"Allwood"* Blocks—similar to "Ironbound", but with wooden splines instead of steel.

800,000 ft. of "Ironbound" Blocks similar to the above were laid in "Knickerbocker Village", Manhattan, in 1934. No repairs have been necessary—a "no-come-back" job—typical of "Ironbound" installations.



Cross Sectional Detail Through $^{25}/_{32}$-In. Ironbound Block—Continuous Strip is Similarly Milled





"IRONBOUND" CONTINUOUS STRIP

The Goliath of All Floors

Most successful of all mastic-set types—and the most economical. Sturdy enough for hardest service. Handsome enough for most particular uses. Laid in heavy manufacturing plants, armories, bakeries, stores, post offices, "luxury" apartments, low-cost "housing", gymnasiums, schools, ballrooms, etc.

Specified by various Federal and State Departments, leading private architects, and largest industrial organizations.

THREE DIFFERENT KINDS

(See illustration at left)

Heavy Duty

Edge Grain

Thicknesses—1¼, 1½, 2 in.
Widths—⅞ and 1⅛ in.
Lengths—10, 12, 14, 16 in.
Woods—Maple and Yellow Pine.

Light Duty

Flat Grain

Thicknesses — $^{25}/_{32}$, $^{33}/_{32}$, $^{41}/_{32}$ in.
Widths—1½ to 3¼ in.
Woods — Oak, Maple, Yellow Pine, Walnut, etc.

Corkcushioned

(Resilient)

Thicknesses—1⅛ and 1⅜ in.
Widths—2¼ in.
Length—12 in.
Wood—Maple.

Cushioned with cork at factory. Laid like ordinary mastic set floors. Entirely eliminates "hardness."

Scientifically designed to give *even* resilience with minimum of resonance. Widely used. Catalogs and specifications on request.

There is a kind of "Ironbound" Floor for every purpose where wood Floors are appropriate.

66J

FLOORING

11
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NATIONAL WOOD PRODUCTS

Division of

EVANS PRODUCTS COMPANY

Fullerton at Greenfield, Detroit

WHEN the Evans Products Company adopted National Wood Products as a full-fledged division, it did so with a definite plan in mind entirely in line with the avowed policy of the Evans Company.

From its beginning in a small shop more than 20 years ago to its present $10,000,000 stature Evans Products has pioneered in business. It has taken old methods and modernized them; it has taken old products and improved them; it has engineered and re-engineered, tried and tested until today its products are accepted beyond question.

National Wood Products is an excellent example of this business policy. Wood flooring is almost as old as architecture. American people have lived on wood floors for hundreds of years and will continue to do so for many generations to come. The problem has been to improve wood flooring to meet the changing demands of modern civilization and to anticipate the needs of tomorrow—not to substitute other materials but to correct the obvious faults of ordinary wood flooring. With this problem in mind Evans engineers set out to develop a line of flooring which combined beauty with long life and wedded strength to utility.

The results were three-fold: EVANITE, a wood block flooring of distinctive design for use where traffic is comparatively light but where long service is expected; LAMINITE, the fir plywood flooring which, measured in any terms, is the finest wood flooring available—beautiful beyond comparison, strong beyond the fondest dreams and almost eternal in wearing qualities; EVERLEVEL, the ideal heavy-duty flooring, as strong as any end grain floor, as pliable as any block flooring but one grade finer than any comparable floor because of its everlevel strip construction.

FACILITIES—From log to finished product National Wood Products floors are handled by the most modern machinery and fabricated to the finest tolerances. The mammoth Jackson, Mississippi, plant is equipped with special machinery designed to do the best possble job on raw material which has been seasoned in modern kilns and prepared specifically for National Wood floors.

SERVICE—National Wood Products maintains sales contacts in nearly all large cities in the United States while its sales and service setup at the home office always is available.

Carrying out an established policy of engineering our floors, from the raw material to the customer, installations are made either by our own organization or by qualified local flooring contractors under our supervision.

Cut Legend

(1) Plant No. 1; (2) Plant No. 2; (3) Plant No. 3; (4) Cooling Shed; (5) Dry Kilns; (6) Charging Platform; (7) Sorting Chain; (8) Lumber Storage; (9) Power House; (10) Storage Shed; (11) Garage; (12 Office; (13) Garage; (14) Cafeteria.

Jackson, Mississippi, Plant

EVANITE

"The Floor Beautiful"

MORE and more the public is demanding character in floors. EVANITE combines all the features inherent in wood flooring with tested improved methods of construction.

Coupled with its own natural beauty EVANITE offers exceptional wearing qualities because of its construction. EVANITE is specially milled from thoroughly air and kiln dried selected stock.

EVANITE is made from oak, maple, and beech. Each block consists of accurately milled strips joined together with a specially developed waterproof casein glue.

Two hardwood dowels are inserted entirely through each block midway between the top and bottom surfaces, at right angles to the length of the strip units. These dowels protrude to the very edge of the tongue, thus greatly reducing the possibility of cupping. Each block is subject to treatment which adds years to its life and detracts no whit from its beauty.

Examination of EVANITE construction leaves no question regarding its multiple uses. It is being used with great success not only in homes but in public buildings, schools, libraries, museums, universities, hospitals, office buildings, banks, stores, ballrooms, apartments and industrial plants.

EVANITE is peculiarly adapted to rejuvenation projects where new floors are required over old strips, blocks or planking. With EVANITE laid on mastic applied to old surface, ordinarily the worn flooring need not be removed, thus saving time and cost. This method also adds to the resiliency and quietness of the new floor.

EVANITE is ideal for schools where foot traffic is continuous. It is much in demand for installation where silence is desired such as is the case in hospitals, libraries, museums, and the like. Its wearing qualities make it desirable for many types of industrial floors where extremely heavy, pounding traffic is not the rule. And in every installation from home to factory, EVANITE affords excellent opportunity for unique and artistic design.

U. S. Post Office, Tulsa, Okla.

Directors Room, Preferred Mutual Life Insurance Co., New Berlin, N. Y.
Architect: Ralph Higgins, New York City

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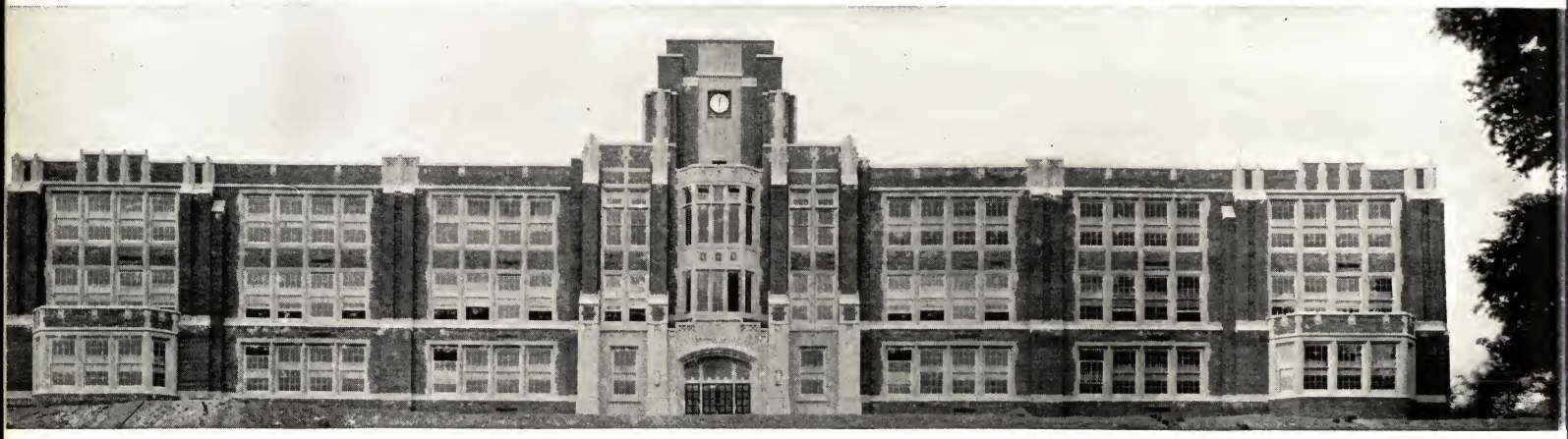
Fogg Art Museum, Harvard University

EVANITE, like all National Wood Products floors, is the result of long study and years of testing. Evans engineers choose to recognize the fact that wood is a "living" subject. Because it is cut, thoroughly kiln dried and milled by precision methods does not mean that wood is "dead." It moves and reacts to weather conditions. Rather than disregard these movements Evans engineers have perfected flooring which resists and minimizes these actions. The spring expansion joint is a revolutionary development. This joint is described in detail on page five.

Fairmount School, Camillus, N. Y.
Architects: Wright & Ellis, Syracuse, N. Y.

Nurses Home in Massachusetts
Architect: Gordon Robb



New Berlin School, New Berlin, N. Y.
Architects: Bley and Lyman, Buffalo, N. Y.

EVANITE SPECIFICATION

PREPARATION OF SUB-SURFACES

CONCRETE SUBFLOORS—The concrete subfloor shall be float finished to a smooth and level surface using a reinforced wood screed or leveling darby float not to exceed eight feet in length. Steel troweling is not necessary and shall be avoided.

When finished and set, the concrete subfloor shall be free from sags or high spots, dust, loose sand or other foreign materials and protected against concrete or plaster droppings.

The distance that the concrete subfloor shall be below the required finish floor level is determined by adding $\frac{3}{32}$ in. (mastic) to the thickness of the wood floor specified. For areas requiring 2 ply membrane waterproofing, an additional ¼ in. must be added.

Expansion joints in the concrete slab or subfloor shall not be filled to within one (1 in.) inch of the surface level.

The concrete subfloor shall be dry before any wood flooring is applied and shall be subjected to moisture tests.

Note: *Old concrete subfloors can be prepared to meet the above specification by the use of a formula containing Portland Cement, Asphalt Emulsion and sand in the proper ratio. The concrete floor must first be primed.*

WATERPROOFING—A 2-ply membrane waterproofing shall be applied to the surface of the concrete subfloors in all areas where the concrete slab is in direct contact with the ground or when the space under the slab cannot be sufficiently ventilated to eliminate moisture condensation.

Note: *This specification is for protection against moisture only and is not intended for areas where water pressure exists.*

Installation of the membrane waterproofing shall not be made until the building is ready for the wood floors and shall be carried out under the supervision of the wood floor contractor.

WOOD BLOCK FLOORING

The following areas shall be finished with **(Clear) (Select) (No. 1 Common)** grade ($\frac{25}{32}$) ($\frac{33}{32}$) inch thick EVANITE Wood Block Flooring as manufactured by the National Wood Products Division of Evans Products Company and hereinafter specified:

Note: *EVANITE Wood Block Flooring is produced in $\frac{25}{32}$" or $\frac{33}{32}$" thickness, red or white oak and beech in the standard grades of: First (Clear); Second (Select) and Third (No. 1 Common).*

Note: *EVANITE Wood Block Flooring may also be installed over wood subfloors; specifications on request.*

EVANITE WOOD BLOCK FLOORING—The blocks shall be made up of solid wood strips not less than 1½" nor more than 3" face width assembled with waterproof glue into composite units $\frac{25}{32}$" thick (also available in $\frac{33}{32}$" thick) by 9"x9" or 6"x12" reinforced by two hardwood dowels extending entirely through the block and forming a part of the tongue and groove.

The blocks shall be flat back (not hollow back) and provided with integral tongues and grooves of the interlocking matched joint type so that when assembled with the adjoining blocks, a double tongue and groove is formed around each block together with a continuous mastic groove around the underside of each block.

The flooring shall be kiln dried at the factory to an average moisture content of 7 per cent. *(A protective coat of penetrating liquid filler of a type that will not prevent the satisfactory use of the finsh material can be provided if desired.)*

Primer—The Primer shall be a bituminous product especially prepared for use with the asphalt mastic cement and approved by the manufacturer of the wood block flooring.

Mastic—The mastic shall be a properly prepared asphalt cement which retains its elasticity indefinitely and approved by the manufacturer of the wood block flooring.

Springs—The expansion joint springs shall be 1½"x8½" semi-elliptical flat steel springs as designed and furnished by the National Wood Products Division of Evans Products Company.

Sealer—The finish material shall be a good quality of penetrating floor sealer as recommended by the manufacturer of the wood block flooring and approved by the architect.

INSTALLATION

The flooring shall not be stored or installed in any part of the building until after it is completely enclosed and the concrete and plaster work in such part are completed and that part of the building is thoroughly dry. A temperature of at least 70 degrees F. shall be maintained where wood flooring occurs during the time of laying and after the floors are laid.

The primer shall be applied uniformly to the concrete and well worked in, using sufficient quantity to cover the surface perfectly. The primer shall be allowed to dry before the asphalt mastic cement is applied.

The asphalt mastic cement shall be applied on the priming coat in such quantities and in a manner to cause perfect adhesion to the concrete and flooring and shall not be adulterated or thinned in any way.

Laying generally shall be done in accordance with the directions of the flooring manufacturer and performed in such a manner as to give closely fitting joints in the finished work.

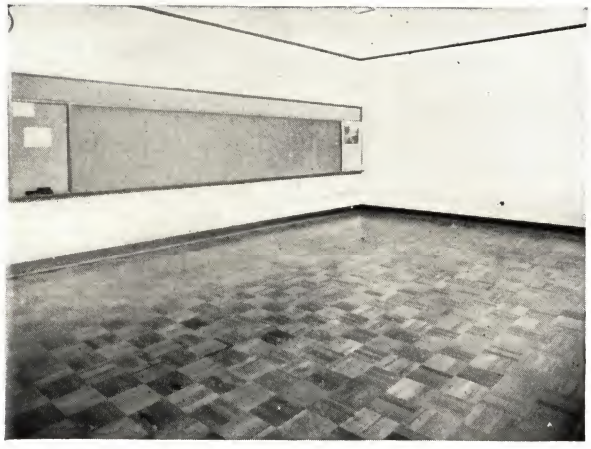
Expansion joints not less than 1¼" wide shall be provided at all walls, columns, thresholds and permanent fixtures. The expansion joints shall be left open as long as practical and then springs, as herein specified, installed on 18" centers in such a manner as to permit movement of the floor when necessary because of expansion or contraction.

Note: *For details see page 5.*

After the flooring is laid, it shall be machine sanded to a smooth, even surface, then brushed clean and given two coats of the penetrating floor finish specified, the last coat to be machine buffed with No. 3 steel wool or hand buffed with No. 00.

The wood block flooring shall be guaranteed by the manufacturer against defective material and workmanship for a period of one year.

Note: *Additional copies of this specification will be furnished on request.*



Class Room, New Berlin (N. Y.) School
Architects: Bley and Lyman, Buffalo, N. Y.

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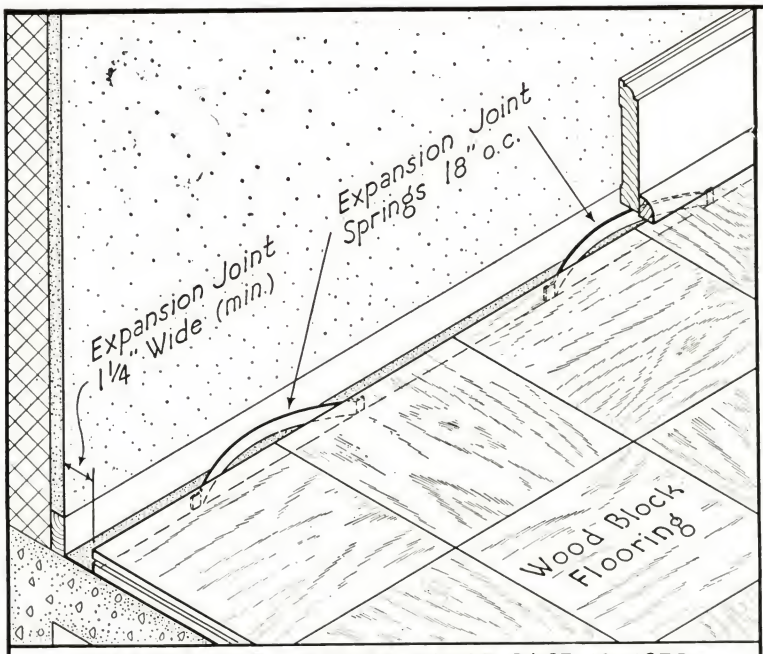


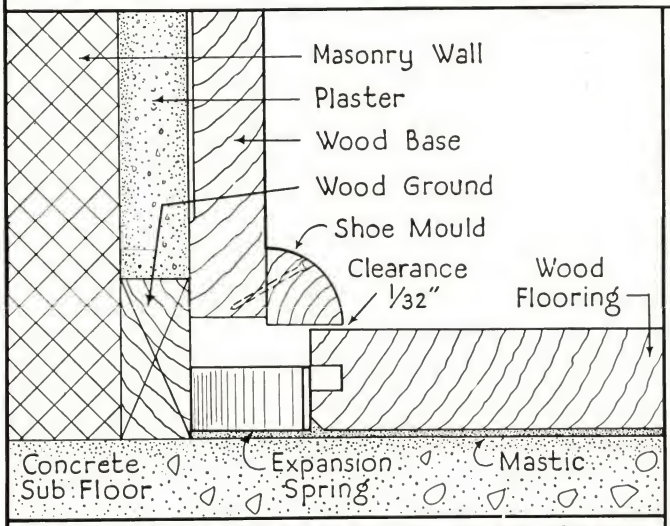
PERSPECTIVE — WHERE WOOD BASE IS USED

SPRING EXPANSION JOINT AND ITS APPLICATION

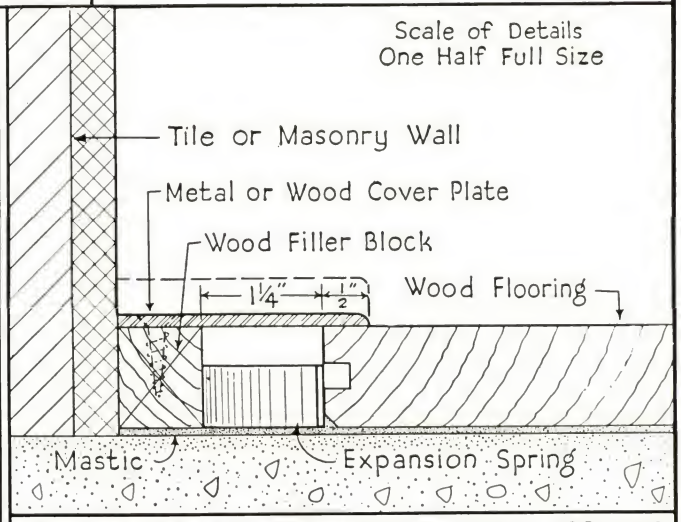
Recognizing the need of additional protection against the normal expansion and contraction of mastic bonded wood floors resulting from atmospheric changes, National Wood Products have engineered and developed the expansion joint spring (shown at left) which has been in successful use for several years.

This spring, requiring a space 1½ in. wide for its installation, has three unique features:

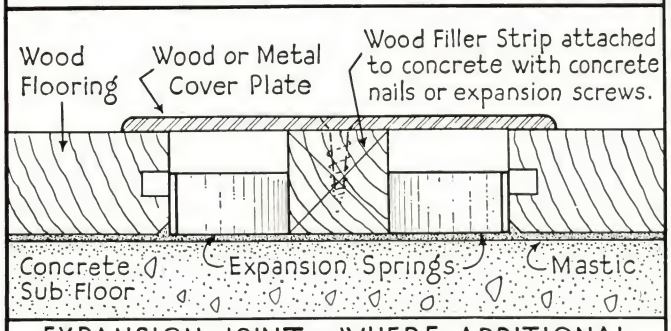
1. The spring can be fully compressed without breaking the mastic bond.
2. As the pressure of expansion is reduced, the spring returns to its original form, gradually forcing the outer rows of block to return to their normal position.
3. Maximum use is made of the expansion space available as the spring compresses to ¼ in.



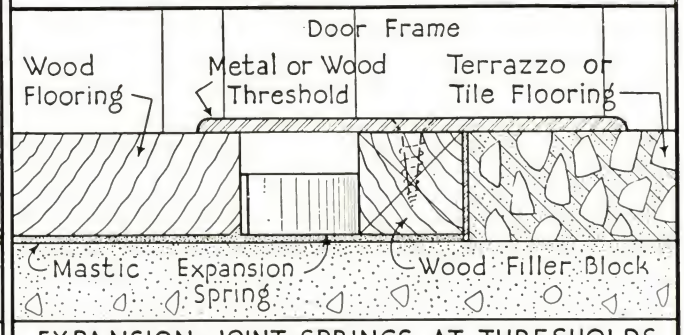
APPLICATION OF EXPANSION JOINT SPRINGS WHERE WOOD BASE & SHOE ARE USED



APPLICATION OF EXPANSION JOINT SPRINGS AT MASONRY OR TILE WALLS



EXPANSION JOINT — WHERE ADDITIONAL EXPANSION IS NEEDED FOR LARGE AREAS



EXPANSION JOINT SPRINGS AT THRESHOLDS BETWEEN DIFFERENT FLOOR MATERIALS

LAMINITE

"The Floor Eternal"

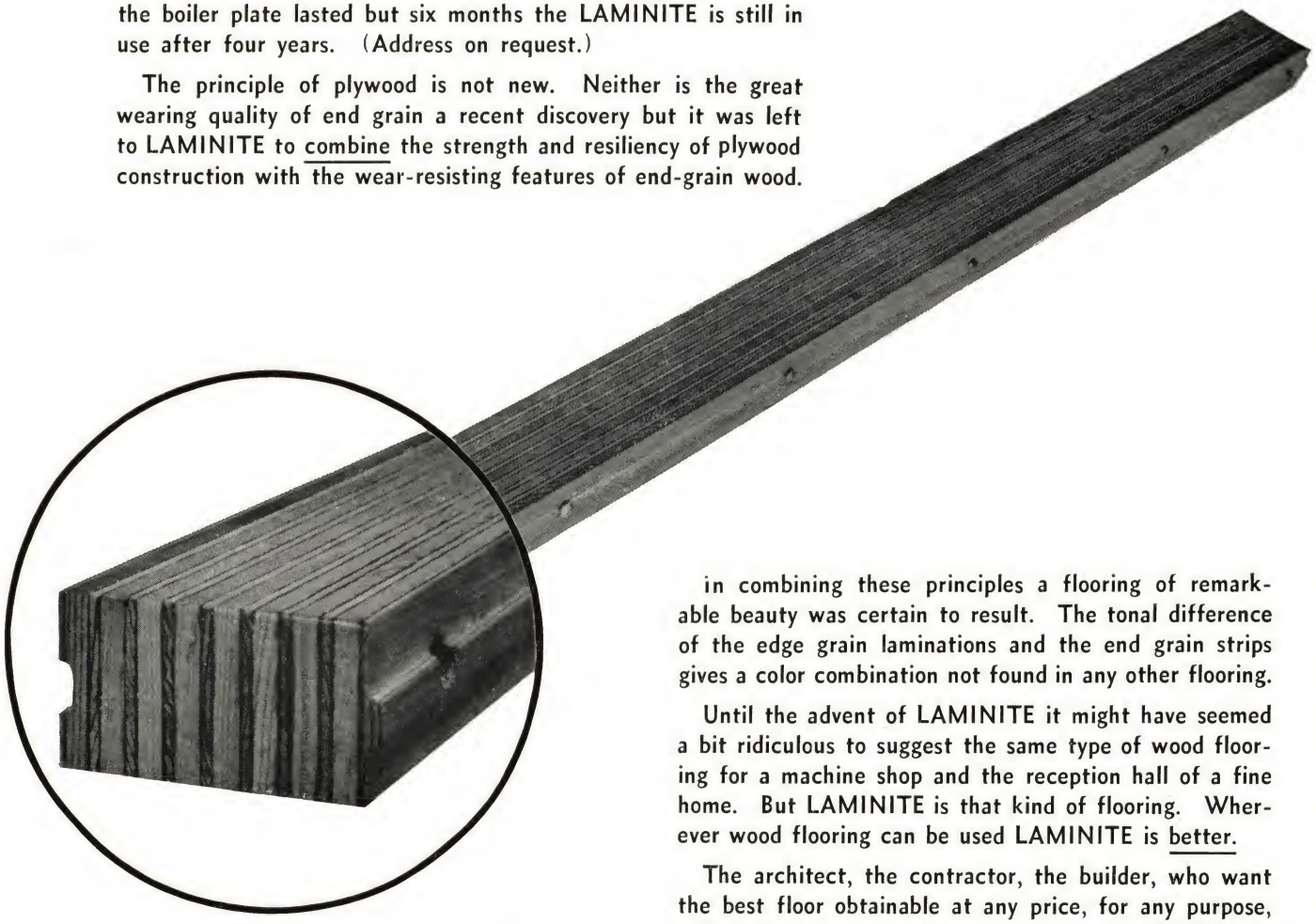
FIR PLYWOOD

Superlatives are apt to be distasteful but any discussion of LAMINITE flooring without the use of superlatives would be something less than complete.

Let us just say this: There is no floor like LAMINITE. Its patented construction is such that it stands alone among floors and can not be duplicated.

Although beauty is the keynote, this same floor in one case was substituted for boiler plate on a trucking floor and while the boiler plate lasted but six months the LAMINITE is still in use after four years. (Address on request.)

The principle of plywood is not new. Neither is the great wearing quality of end grain a recent discovery but it was left to LAMINITE to combine the strength and resiliency of plywood construction with the wear-resisting features of end-grain wood.



This Magnified Section of LAMINITE Unit Shows Laminations of End Grain and Edge Grain Wood. Note Nail Holes for Lateral Nailing

in combining these principles a flooring of remarkable beauty was certain to result. The tonal difference of the edge grain laminations and the end grain strips gives a color combination not found in any other flooring.

Until the advent of LAMINITE it might have seemed a bit ridiculous to suggest the same type of wood flooring for a machine shop and the reception hall of a fine home. But LAMINITE is that kind of flooring. Wherever wood flooring can be used LAMINITE is better.

The architect, the contractor, the builder, who want the best floor obtainable at any price, for any purpose, will fall short of attainment unless LAMINITE is specified.

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SPECIAL FEATURES OF LAMINITE

STRUCTURAL STRENGTH

Because of its laminated construction and lateral nailing, LAMINITE has structural strength at least 75% as great as the equivalent thickness of regular pine or fir flooring. This allows LAMINITE to be laid over open joists as well as over subfloors. Actual load requirements are met by varying the thickness of units.

"LAMINITE" CONSTRUCTION

Heavy end grain as well as edge grain laminations are cut from the largest and finest Douglas Fir logs. These laminations after drying thoroughly are put together with waterproof glue to form strips of LAMINITE flooring which will not cup. The strips are run with tongue and groove and drilled for lateral nailing, assuring a smooth, uniform surface.

MINIMUM UNITS TO FLOOR AREA

LAMINITE is milled in 8-foot lengths with the result that but 500 pieces of LAMINITE are used to cover 1,000 square feet of floor space. From six to 23 thousand pieces of end grain flooring are needed to cover the same area.

LATERAL NAILING

Because of the lateral nailing feature of LAMINITE, it forms a virtual "carpet of wood" when laid. Holes are drilled in each unit through which nails are driven in a lateral direction.

WEIGHT ECONOMY

The structural strength of LAMINITE allows it to be used in lesser thickness for any given duty than is possible with end grain floors. This saving in weight is important.

UNIVERSAL APPLICATION

Because of its unique construction LAMINITE may be laid in any manner in which other types of flooring are laid. It may be applied on mastic directly on concrete subfloors, on sleepers laid on the concrete subfloors, over old wood floors or across open joists.

Marcellus, N. Y. Central School
Architect: Carl W. Clark, Cortland, N. Y.

LAMINITE SPECIFICATION

PREPARATION OF SUB-SURFACES

CONCRETE SUBFLOORS—The concrete subfloor shall be float finished to a smooth and level surface using a reinforced wood screed or leveling darby float not to exceed eight feet in length. Steel troweling is not necessary and shall be avoided.

When finished and set, the concrete subfloor shall be free from sags or high spots, dust, loose sand or other foreign materials and protected against concrete or plaster droppings.

The distance that the concrete subfloor shall be below the required finish floor level is determined by adding $\frac{3}{32}$" (mastic) to the thickness of the wood floor specified. For areas requiring 2 ply membrane waterproofing, an additional ¼" must be added.

Expansion joints in the concrete slab or subfloor shall not be filled to within one (1") inch of the surface level.

The concrete subfloor shall be dry before any wood flooring is applied and shall be subjected to moisture tests.

Note: *Old concrete subfloors can be prepared to meet the above specification by the use of a formula containing Portland Cement, Asphalt Emulsion and sand in the proper ratio. The concrete floor must first be primed.*

WATERPROOFING—A 2 ply membrane waterproofing shall be applied to the surface of the concrete subfloors in all areas where the concrete slab is in direct contact with the ground or when the space under the slab cannot be sufficiently ventilated to eliminate moisture condensation.

Note: *This specification is for protection against moisture only and is not intended for areas where water pressure exists.*

WOOD FLOORING

The following areas shall be finished with (1$\frac{1}{16}$) (1¼) (1½) (1¾) inches thick Laminite Fir Plywood Flooring as manufactured by the National Wood Products Division of Evans Products Company and hereinafter specified:

Note: *Laminite Fir Plywood Flooring is manufactured in the following thicknesses: 1$\frac{1}{16}$" and 1¼" for light traffic; 1½" and 1¾" for heavy duty service. Also available in thicknesses up to 3½" if required for special uses.*

Note: *Laminite can be installed over wood subfloors or over 1x4 strips when desired for gymnasiums; also applied to walls. Typical specifications furnished on request.*

LAMINITE FIR PLYWOOD FLOORING—The wood flooring shall be of Douglas Fir and composed of end grain lamination separated by edge grain binders, all to be glued together with waterproof glue in composite strips 2$\frac{13}{16}$" wide by (1$\frac{1}{16}$) (1¼) (1½) (1¾) inches thick by approximately 7′ long.

The surface area of the end grain lamination shall be at least twice that of the edge grain binders. The strips so fabricated shall be kiln dried to a moisture content of 8 per cent, surfaced, provided with integral tongues and grooves and bored for lateral nails not more than 18" on centers.

Typical Gymnasium Floor in Laminite

Primer—The primer shall be a bituminous product especially prepared for use with the asphalt mastic and approved by the manufacturer of the Laminite Fir Plywood Flooring.

Mastic—The mastic shall be a properly prepared asphalt cement which retains its elasticity indefinitely, suitable for hot application and approved by the manufacturer of the Laminite Fir Plywood Flooring.

Nails—The nails used for lateral nailing shall be 4½"-10 gauge cement coated box nails.

Springs—The expansion joint springs shall be 1½"x8½" semi-elliptical flat steel springs as designed and furnished by the National Wood Products Division of Evans Products Company.

Sealer—The finish material shall be a good quality of penetrating floor sealer as recommended by the manufacturer of the wood block flooring and approved by the architect.

INSTALLATION

The flooring shall not be stored or installed in any part of the building until after it is completely enclosed and the concrete and plaster work in such part are completed and that part of the building is thoroughly dry. A temperature of at least 70 degrees F. shall be maintained where wood flooring occurs during the time of laying and after the floors are laid.

The primer shall be applied uniformly to the concrete and well worked in, using sufficient quantity to cover the surface perfectly. The primer shall be allowed to dry before the asphalt mastic cement is applied.

The asphalt mastic cement shall be applied hot on the priming coat in such quantities and in a manner to cause perfect adhesion to the concrete and flooring and shall not be adulterated or thinned in any way.

Laying generally shall be done in accordance with the directions of the flooring manufacturer. The flooring shall be laterally nailed on not less than 18" centers and laid with the end joints well staggered.

Expansion joints not less than 1¼" wide shall be provided at all walls, columns, thresholds and permanent fixtures. The expansion joints shall be left open as long as practicable and then springs, as herein specified, installed on 18" centers in such a manner as to permit movement of the floor when necessary because of expansion or contraction.

Note: *See details page 5.*

After the flooring is laid, it shall be machine sanded to a smooth, even surface, then brushed clean and given two coats of the penetrating floor finish specified, the last coat to be machine buffed with No. 3 steel wool or hand buffed with No. 00.

The Laminite Fir Plywood Flooring shall be guaranteed by the manufacturer against defective material and workmanship for a period of one year.

Note: *Additional copies of this specification will be furnished on request.*

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EVERLEVEL

"The Heavy Duty Floor"

END GRAIN YELLOW PINE

For sheer strength and ability to take abuse, EVERLEVEL is without equal in its price class. It is a composite end grain flooring built up to present an entire floor secured in a single unit.

Appreciating the lasting qualities of end grain blocks but recognizing the ordinary troubles inherent in single wood block installations, Evans engineers perfected EVERLEVEL which eliminates most of the bad features while retaining all of the good.

EVERLEVEL is doweled securely into strips six feet in length with dowels which run the full length of the strip. Each strip then is firmly secured to the adjoining unit by tight fitting galvanized steel splines laid in continuous strip the entire length of the floor. These features make EVERLEVEL the only truly "ever level" end grain block floor.

The end grain provides a remarkably durable wearing surface which is quiet, resilient and easy on the feet of workers. Trucking of heavy loads is done with less power and greater speed while the insulating effect reduces shop noises.

If a tough, long-wearing floor for heavy duty use is wanted, EVERLEVEL is the answer.

Ann Arbor (Mich.) Daily News Bldg.
Architect: Albert Kahn Inc., Detroit

U. S. Post Office, Pilsen Station, Chicago, Ill.

Installing Everlevel, New U. S. Parcel Post Building, Boston

EVERLEVEL SPECIFICATION

PREPARATION OF SUB-SURFACES

CONCRETE SUBFLOORS—The concrete subfloor shall be float finished to a smooth and level surface using a reinforced wood screed or leveling darby float not to exceed eight feet in length. Steel troweling is not necessary and shall be avoided.

When finished and set, the concrete subfloor shall be free from sags or high spots, dust, loose sand or other foreign materials and protected against concrete or plaster droppings.

The distance that the concrete subfloor shall be below the required finish floor level is determined by adding 3/32" (mastic) to the thickness of the wood floor specified. For areas requiring 2 ply membrane waterproofing, an additional 1/4" must be added.

Expansion joints in the concrete slab or subfloor shall not be filled to within one (1") inch of the surface level.

The concrete subfloor shall be dry before any wood flooring is applied and shall be subjected to moisture tests.

Note: *Old concrete subfloors can be prepared to meet the above specification by the use of a formula containing Portland Cement, Asphalt Emulsion and sand in the proper ratio. The concrete floor must first be primed.*

WATERPROOFING—A 2 ply membrane waterproofing shall be applied to the surface of the concrete subfloors in all areas where the concrete slab is in direct contact with the ground or when the space under the slab cannot be sufficiently ventilated to eliminate moisture condensation.

Note: *This specification is for protection against moisture only and is not intended for areas where water pressure exists.*

Installation of the membrane waterproofing shall not be made until the building is ready for the wood floors and shall be carried out under the supervision of the wood floor contractor.

WOOD BLOCK FLOORING

The following areas shall be finished with Everlevel End Grain Strip Wood Block Flooring as manufactured by the National Wood Products Division of Evans Products Company and hereinafter specified:

EVERLEVEL END GRAIN STRIP WOOD BLOCK FLOORING—The blocks forming the strips shall be of carefully selected close grain southern yellow pine and show all end grain on the surface.

The surface dimensions of the blocks of which the strips are composed shall be not more than 2"x3 5/8" nor less than 1 1/2"x3 1/4".

The blocks shall be dressed square and true to uniform dimensions and shall be assembled in strips at the factory by means of continuous dowels. The strips shall be milled for metal spline for the purpose of securing the adjoining strips together.

The strips shall have a uniform width of not more than 3 5/8" nor less than 3 1/4" and an average length of **(4)** **(6)** feet. The thickness shall be uniform throughout and shall be not less than **(1 1/2)** **(1 3/4)** **(2)** **(2 1/2)** inches unless otherwise specified.

Note: *EVERLEVEL is manufactured in the following thicknesses and lengths: 1 1/2" and 1 3/4" for light traffic, standard length 4 feet; 2" and 2 1/2" for heavy duty service, standard length 6 feet.*

The flooring shall be kiln dried at the factory to an average moisture content of 8 per cent, and after assembling into strips, given a protective coat of penetrating liquid filler of a type that will not prevent the satisfactory use of the finish coat of sealer.

Spline—The spline shall be 1/2" wide x .040 thickness electro galvanized tempered steel strip.

Primer—The primer shall be a bituminous product especially prepared for use with the asphalt mastic cement and approved by the manufacturer of the end grain strip wood block flooring.

Mastic—The mastic shall be a properly prepared asphalt cement which retains its elasticity indefinitely, suitable for hot application and approved by the manufacturer of the end grain strip wood block flooring.

Sealer—The finish material shall be a good quality of penetrating floor sealer as recommended by the manufacturer of the end grain strip wood block flooring and approved by the architect.

INSTALLATION

The flooring shall not be stored or installed in any part of the building until after it is completely enclosed and the concrete and plaster work in such part are completed and that part of the building is thoroughly dry. A temperature of at least 70 degrees F. shall be maintained where wood flooring occurs during the time of laying and after the floors are laid.

The primer shall be applied uniformly to the concrete and well worked in, using sufficient quantity to cover the surface perfectly. The primer shall be allowed to dry before the asphalt mastic cement is applied.

The asphalt mastic cement shall be applied hot on the priming coat in such quantities and in a manner to cause perfect adhesion to the concrete and flooring and shall not be adulterated or thinned in any way.

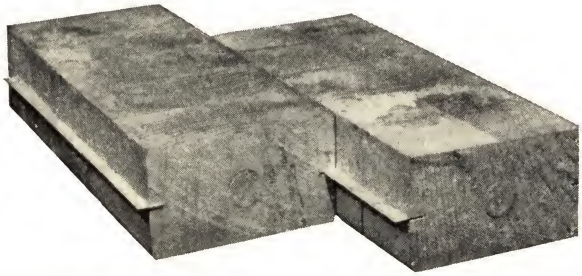
Laying generally shall be done in accordance with the directions of the flooring manufacturer. The flooring shall be laid to give closely fitting joints in the finished work and the metal splines shall be continuous across the end joints between the strips.

Expansion Joints from 1 to 2 inches, depending on the size of the floor, shall be provided at walls, columns, thresholds and permanent fixtures. The expansion joints shall be left open as long as practicable and then filled with a premoulded type of expansion joint filler or expansion joint springs.

The surface of the floors in the finished work shall be even, and if necessary, the floors shall be sanded sufficiently to bring the tops of the blocks and strips flush at the joints. Floors shall be brushed clean and finished with one coat of sealer as specified.

The end grain strip wood block flooring shall be guaranteed by the manufacturer against defective material and workmanship for a period of one year.

Note: *Additional copies of this specification will be furnished on request.*



This Enlargement Shows the Center Doweling and Continuous Steel Splines Which Combine to Make EVERLEVEL a Truly "Ever Level" End Grain Flooring

NATIONAL WOOD PRODUCTS

FLOORING

Digitized by ASSOCIATION FOR PRESERVATION TECHNOLOGY, www.apti.org for the
BUILDING TECHNOLOGY HERITAGE LIBRARY
https://archive.org/details/buildingtechnologyheritagelibrary

FLOORING

SOUTHERN WOOD PRESERVING COMPANY

ATLANTA, GA.

SALES OFFICES

NEW YORK, N. Y., 10 East 43rd Street
DETROIT, MICH., 1405 National Bank Building
TOLEDO, OHIO, 25 No. Ontario Street
PITTSBURGH, PA., Dollar Savings & Trust Building
PHILADELPHIA, PA., Girard Trust Building
CHARLOTTE, N. C.

TREATING PLANTS: EAST POINT, GA. and CHATTANOOGA, TENN.

Products

CREO-PINE WOOD BLOCK FLOORS.

Also Creo-pine Subflooring, Wood Conduit, Cross Arms, Fence Posts and Poles.

Creo-pine
TRADE NAME
Registered

Uses of Creo-pine Wood Block Floors

Creo-pine floors are used in factories, machine-shops, warehouses, loading platforms and other establishments where durability is an essential factor, and comfort to workmen and consequent increased human efficiency are items of consideration.

Qualifications of a Good Floor

(1) It should withstand surface wear and afford a smooth surface. (2) It should be resilient, free from vibration, non-conductive of heat and non-slippery. (3) It should not dust or crumble. (4) It should be sanitary and easy to clean. (5) It should adapt itself readily to repairs, not only to the surface but to subfloor work. (6) It should be impervious to decay and the action of oils, acids, etc.

Determining Factors of a Good Floor

(1) Blocks shall be made of select Southern yellow pine. (2) They shall be manufactured with mechanical precision to the proper size for service required. (3) They shall be impregnated with creosote oil in accordance with standard specifications. (4) They shall be correctly installed.

Creo-pine Floors Conform to the Ideal

Creo-pine floors meet the above qualifications, as the foregoing determining factors are embodied in each finished floor. The lumber used is the best obtainable Southern yellow pine, thoroughly air seasoned.

Blocks are carefully manufactured to correct size for service required and impregnated with creosote oil by use of the most modern wood preserving equipment. Creosote used is obtained wholly from pure coal tar and is in accordance with standard specifications. The installation is handled by experienced superintendents.

Further information and estimates gladly furnished.

Plant of Illinois Glass Co., Bridgeton, N. J.

Specifications for Creo-pine Floors

Timber—Timber shall be air seasoned Southern Yellow Pine, square edged and sound, free from bark, loose or rotten knots, wormholes, shakes, check, or other defects detrimental to its strength or durability. It shall average not less than 6 annular rings to the inch measured radially and beginning 2 in. from the heart center.

Size—Blocks shall be truly rectangular, 2½ to 4 in. wide, 5½ to 9 in. long, and 2, 2½ or 3 in. deep (parallel to the fiber). A variation of $\frac{1}{16}$ in. shall be allowed in depth, and ⅛ in. in width.

Only one width of blocks shall be used on any single floor.

Preservative—Creosote must be a pure coal tar product obtained entirely from coal gas or coke oven tar and must not contain any admixture of tar oils, petroleum or any other products. It shall be completely liquid at 38° C. and not more than 3% of the water-free oil shall be insoluble in chloroform or benzol. Specific gravity shall not be less than 1.05 and shall not exceed 1.14. When 100 grams of the creosote are placed in a retort and subjected to a distilling test as described in Bulletin No. 96 of the American Railway Engineering and Maintenance of Way Association, amount of distillation shall not exceed the following:

Up to 200° C., no distillate.
Up to 210° C., less than 5%.
Up to 235° C., not more than 25%.
Up to 315° C., not more than 50%.
The oil shall not contain more than 2% of water.

Treatment—Blocks shall be properly treated by pressure-vacuum-empty cell process by a creosoting plant properly equipped for such work, injecting not less than 16 lb. of oil per cu. ft. into blocks with a final retention of 6 to 8 lb.

Foundation—A concrete foundation shall be prepared from 4 to 6 in. thick, depending upon loads to which floor will be subjected, consisting of 1 part cement, 3 parts sand and 6 parts crushed stone or gravel, and brought to a smooth finish sufficiently below grade of floor to provide for depth of blocks.

Concrete must be brought to a smooth and true surface, allowing no coarse aggregate to show, as any unevenness will be apparent in the finished floor.

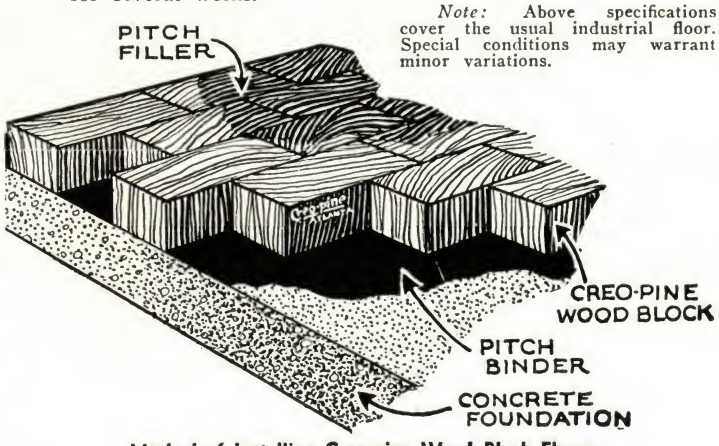
Bituminous Paint Coat—Upon the thoroughly cleaned and dried concrete base apply a coat of bitumen, spreading same smoothly with squeegees to a uniform thickness of not more than ⅛ in.

Laying Blocks—Blocks shall be laid on the paint coat in straight parallel lines (at right angles to line of traffic) breaking joints not less than 2 in. and using only whole blocks, except to start and finish courses. Blocks shall be driven tightly together both on sides and ends.

Top Dressing—After blocks have been laid, a top coat of bitumen shall be squeegeed over top of the blocks and well into interstices between the blocks.

Sand Covering—The entire floor shall be covered with a thin coat of fine clean sand which shall be allowed to remain for several weeks.

Note: Above specifications cover the usual industrial floor. Special conditions may warrant minor variations.



Method of Installing Creo-pine Wood Block Floors

WORTH LUMBER COMPANY

SEATTLE, WASH.

END GRAIN "WORTHWOOD" FLOORING

For Factory, Shop, Warehouse, Printing Plant, Gymnasium, Armory, Bakery, Post Office

Advantages

The long life and great efficiency of end grain flooring lies in the wear-resisting quality of end grain wood. It is practically everlasting under most severe trucking as proven by street paving blocks and factory flooring during many years. Does not sliver or splinter. In "WORTHWOOD" Flooring the end grain blocks are fabricated into tongue and grooved strips by solid wood splines which keep them permanently firm, smooth and level. It it clean, quiet, warm and resilient. Not affected by heat or cold and not dust producing. Bright color increases visibility. Non-slip. Easy trucking. Preserves sharp edges of tools and does not scratch polished castings. Eliminates space where dampness, mould, or decay might occur.

"WORTHWOOD" is a serviceable, attractive, finished floor, not rough paving blocks. It is recommended as most satisfactory floor for heavy duty in dry interior rooms.

Approved

End Grain "WORTHWOOD" Strip Flooring is approved by the Supervising Architect of the Federal Government, by the Forest Products Laboratory of University of Washington, and by leading Architects throughout the United States. It has been in constant use under heavy trucking and severe service since 1932 with complete satisfaction. 96 Government Buildings have "WORTHWOOD" Flooring where greatest wear resistance is required. It is being used successfully in 38 States.

Typical Installations Indicating Type of Floor Used

Atlas Powder Co., Wilmington, Del. (A)
Gulf Oil Co., Pittsburgh, Pa. (C)
Northwest Lead Co., Seattle, Wash. (B)
Pittsburg Glass Co., San Antonio, Tex. (B)
Woolworth & Co., New York, N. Y. (B)
Port Docks, Seattle, Wash. (B)
Armory, Falls City, Neb. (B)
Armory, Kearney, Neb. (B)
Custom House, St. Louis, Mo. (A)
Federal Bldg., New York, N. Y. (A)
U. S. Mint, San Francisco, Cal. (A & D)
Firth Sterling Steel Co, McKeesport, Pa. (C)
Journal Publishing Co., Providence, R. I. (B)
Chicago Athletic Club, Chicago, Ill. (A)
School Gymnasiums (2) Hammond, Ind. (C)
Women's Athletic Club, Chicago, Ill. (A)
Artillery Proving Grounds, Aberdeen, Md. (A)
Bureau of Mines, Bartlesville, Okla. (A)
Federal Highway Shops, Denver, Colo. (B)
Naval Reserve Airport, Glenview, Ill. (C)
Naval Training Station, Great Lakes (C)
Puget Sound Navy Yard (3 Bldgs.) (B)

School Shops (C)

San Francisco, Cal.
Pittsburgh, Pa.
Peoria, Ill.
Waukegan, Ill.
Canton, Ohio
Grand Forks, N. D.
Delmar, S. C.
Ellensburg, Wash.
Redwood Falls, Minn.

Post Offices (A)

Chicago, Ill.
Columbus, Ohio
Philadelphia, Pa.
Richmond, Va.
San Francisco, Cal.
Jackson, Miss.
Dallas, Tex.
Galveston, Tex.
Nashville, Tenn.
Lexington, Ky.
Rochester, Minn.
Macon, Ga.
Lynchburg, Va.
Terre Haute, Ind.
Tacoma, Wash.
Portland, Me.

(Over 50 other Post Offices)

Specifications

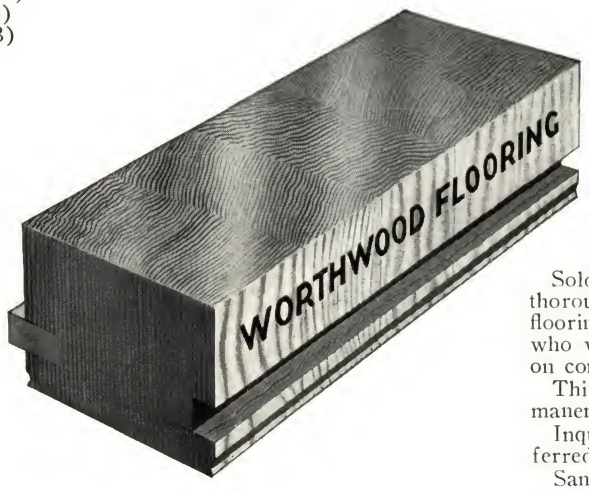
The floors shall be End Grain "WORTHWOOD" Strip Flooring manufactured by Worth Lumber Company, Seattle, Wash.
The face of the floor shall be 100% End Grain.
Each End Grain Block shall extend full depth of flooring.
Material—Kiln dried dense grain Douglas Fir.
Quality—Clear, sound, all heart wood, no sap, and free from all defects on wearing surface.
Fabrication—Securely assembled by continuous solid wood splines to form heavy tongue and groove flooring strips.
Base grooved to care for surplus mastic.
Edges of strips shaved for accurate matching.
Face sanded to uniform thickness.
Lengths—Random 2 to 8 ft. average 6 or longer.
Optional Sizes and ***Recommendations.***
Types "A" and "D" comply with Post Office Specifications.
Types "B" and "C" same quality but lower cost.
Use "C" for Gymnasiums and light machine shops.
Use "B" for Armories and heavy industrial buildings.
Type "A"—Strips 2½" thick, 3½" wide.
Composed blocks 1⅝x3½ to 1⅞x3½".
Type "B"—Strips 2½" thick 4½" wide.
Composed blocks 1⅜x4½" to 1⅞x4½".
Type "C"—Strips 2" thick 4½" wide.
Composed blocks 1⅜x4½" to 1⅞x4½".
Type "D"—Strips 2" thick 3½" wide.
Composed blocks 1⅝x3½ to 1⅞x3½".
Treatment at factory (optional) Penetrating, practically colorless and odorless filler to protect against moisture in transit.

Standard Installation

The end grain strips shall be laid in asphaltic mastic on concrete subfloor, with end joints staggered and with 1 to 2-in. expansion strips around all walls and columns. Concrete slab must be smooth, dry and clean. Subfloors directly on the ground or below level must be adequately waterproofed. A good quality asphaltic primer and mastic shall be applied in accordance with manufacturer's instructions. Mastic must not contain water when flooring is laid. The floor, after installation, shall be sanded, if necessary, to make a smooth surface and shall be treated with a penetrating filler of maximum waterproofing character.

Athletic Buildings

For increased *uniform resilience* lay flooring in mastic over mat of cork or insulation board of about 17 or 18-lb. density. For *spanning open spaces* between joists or screeds lay flooring in mastic on Douglas Fir plywood subfloor. (See strength table in Douglas Fir Plywood Association catalog in Sweet's.)



"Edgeworth" Fir Flooring

1½x5—12 to 40 in.
B&Btr. edge grain Fir.
Matched sides and ends.

Marketing

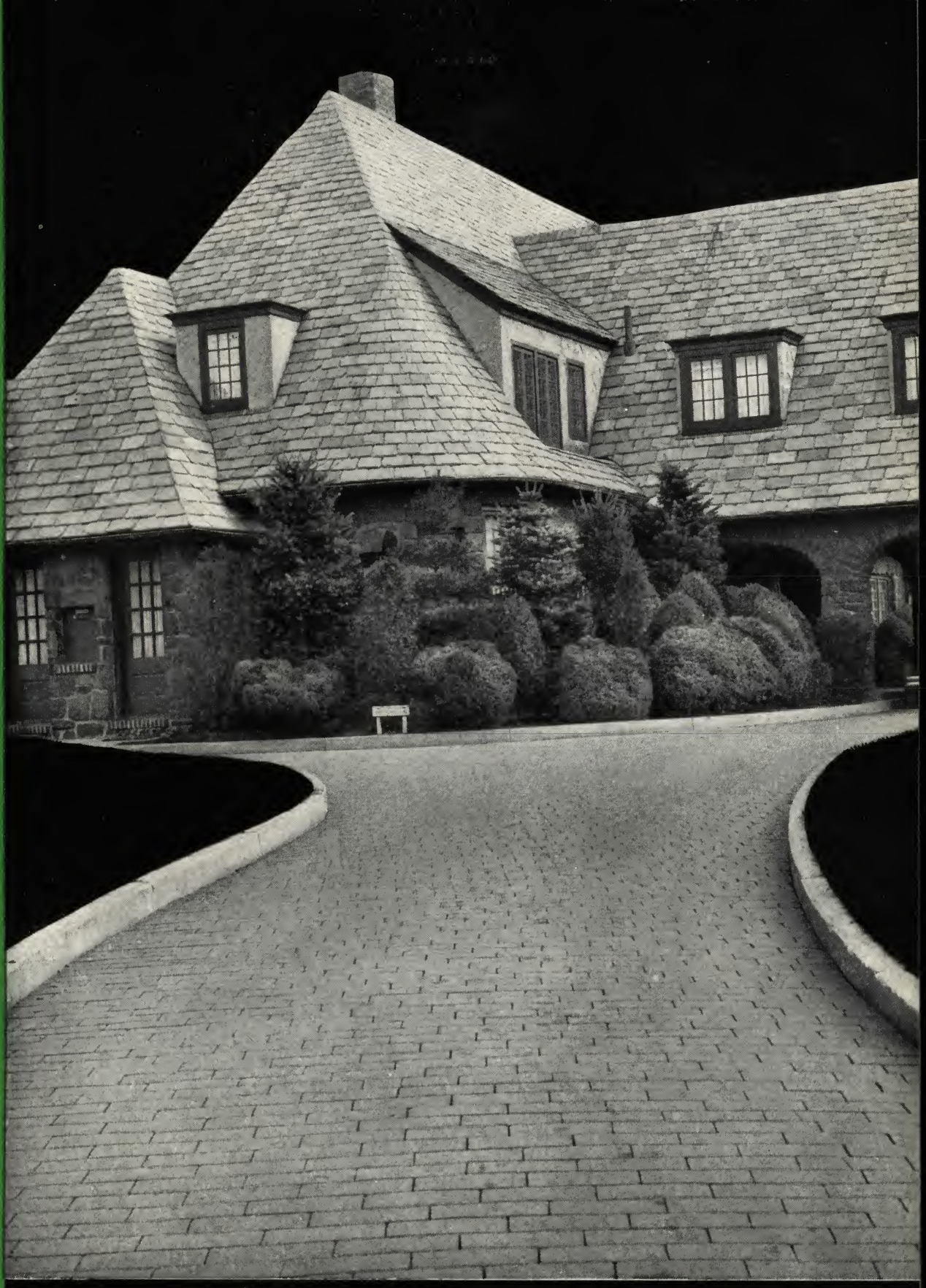
Sold through long established, thoroughly experienced and reliable flooring firms licensed in 50 cities who will furnish samples and quote on completely installed floor.

This marketing policy assures permanent local responsibility.

Inquiries to Seattle office are referred to nearest representative.

Samples furnished on request.

HASTINGS



Asphalt Blocks

Cover Illustration: Asphalt Block Driveway, Residence, Geo. D. Hofe, South Orange, N.J.

Left: Asphalt Block Non-Skid Construction, Riverside Drive Approach to George Washington Bridge, New York City.

HASTINGS EXPERIENCE AND SERVICE

The Hastings Pavement Company was organized in 1885 for the purpose of producing a unique form of pavement material—the compressed Asphalt Block.

Installations in service today, which were laid in the first decade of the Company's existence, bear witness to the successful accomplishment of that purpose.

To the architect and engineer, is offered the benefit of more than 52 years' experience in the manufacture and improvement of a product which has earned recognition as the standard for its kind.

Right: Asphalt Block Pavement, Park Avenue Concourse around Grand Central Station, New York City.

THE HASTINGS PAVEMENT CO., 25 Broad Street, NEW YORK, N. Y.

HASTINGS ASPHALT BLOCKS AND TILES

THE term "Survival Value" as applied to manufactured products has been defined as the capacity to fulfill the demands of changed and changing conditions over extended periods of time.

Within the scope of this definition, Hastings Asphalt Blocks have an unquestioned "Survival Value" in the field of paved surfaces. Their inherent durability, moisture-resistance, toughness, non-absorption and smoothness have adapted them to the exacting requirements of modern industry.

Unit manufacture under precise laboratory control assures quality and uniformity of product. Diversity in size and formula permits adaptation to a wide range of installations under varying conditions of usage.

Above: Veterans' Memorial Bridge, Rochester, New York, Roadway Paved with Hastings Asphalt Blocks.

Above: Asphalt Tile Walks Laid 1888 in Flower Gardens, Prospect Park, Brooklyn, N. Y.

Above: Asphalt Block Pavement fronting Columbia University Medical Center, New York City.

Below: Asphalt Block Aprons, Floyd Bennett Field, Municipal Airport, Brooklyn, N. Y.

HASTINGS ASPHALT BLOCK FLOORS

TYPICAL USES

FACTORIES
PIERS
TERMINALS
WAREHOUSES
LOADING PLATFORMS
STABLES

IN addition to their function as traffic carriers, modern industrial floors must prove adequate for light and heavy manufacturing, for storage, packing, shipping, assembling and parking.

They must be dense, wear-resistant, smooth, clean and sightly—comfortable under foot, odorless, non-exuding, non-absorptive and free from the ravages of contraction and expansion.

Hastings Asphalt Blocks embody all these essential qualifications. They may be laid on various foundations, are easily taken up and relaid. Their unit construction permits easy access to subsurface structures, makes maintenance simple and inexpensive and by absorbing movement due to temperature extremes, prevents bulging or cracking.

Right: Asphalt Block Floor, "Steamer Normandie" pier, French Line, New York City.

Below: Asphalt Block Floor, Texas and Pacific Ry. Freight Terminal, Ft. Worth, Tex.

Above: Asphalt Block Platform, Arbuckle Bros., Brooklyn, N. Y.

Left: Asphalt Block Floor, Airport Hangar, Drew Field, Tampa, Florida.

HASTINGS ASPHALT BLOCK ROOFS

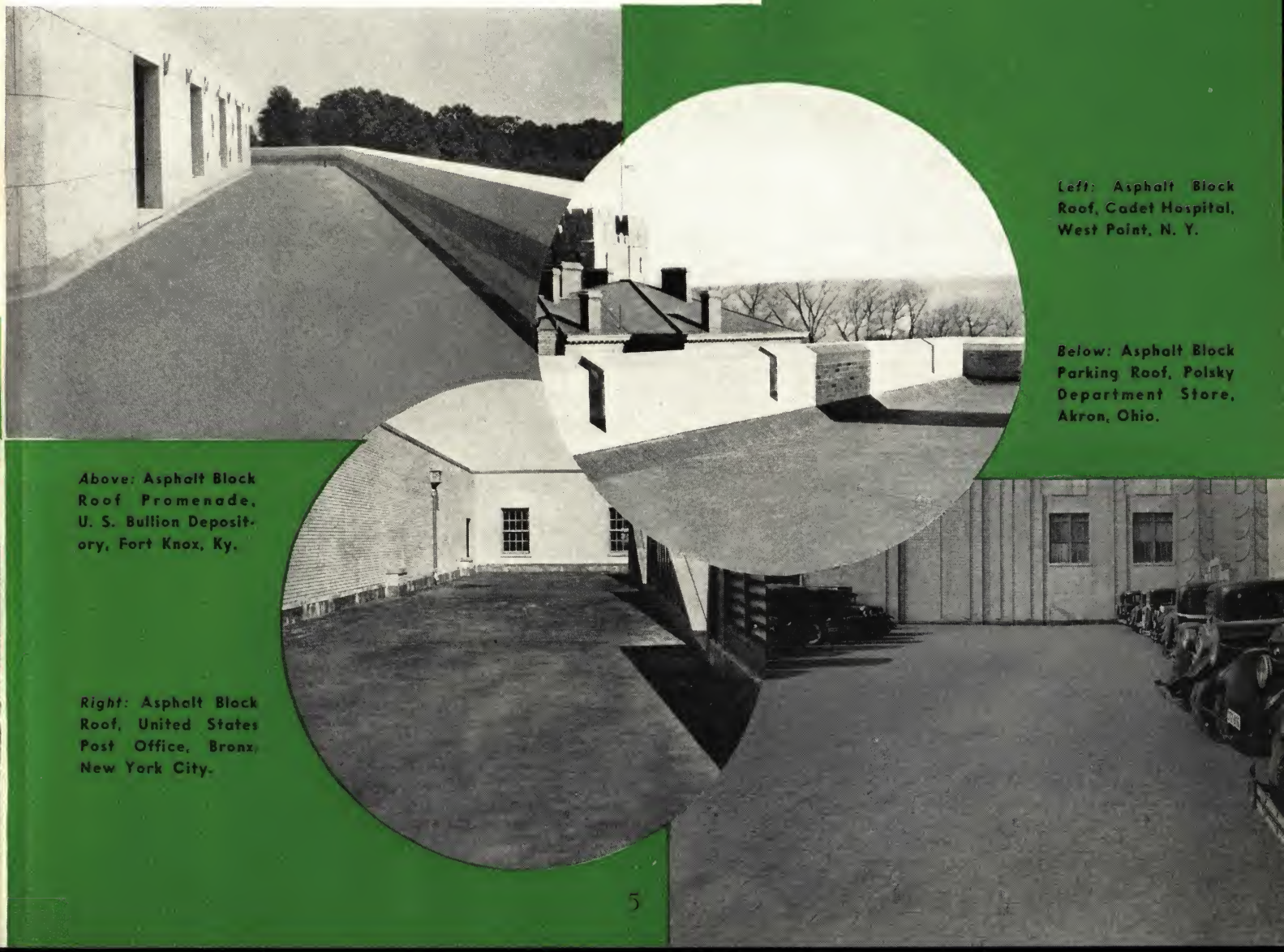
ASPHALT Blocks laid on roof decks make roofs usable, at the same time providing protection to the underlying waterproofing and structure.

The high density of Asphalt Block roof decks gives them a load carrying capacity adequate for car parking and storage while their smoothness and comfort under foot adapt them admirably to balconies, promenades and recreation areas.

Asphalt Block roof decks are non-expansive, therefore free from cracking, waving or blistering. They are fire-resisting, safe and sanitary, easily and inexpensively installed, and may be placed at any season of the year.

TYPICAL USES

RECREATIONAL
PARKING
STORAGE
SUN DECKS
PROMENADES
BALCONIES



Left: Asphalt Block Roof, Cadet Hospital, West Point, N. Y.

Below: Asphalt Block Parking Roof, Polsky Department Store, Akron, Ohio.

Above: Asphalt Block Roof Promenade, U. S. Bullion Depository, Fort Knox, Ky.

Right: Asphalt Block Roof, United States Post Office, Bronx, New York City.

Above: Asphalt Block Driveway, Residence of Robert F. Morrison, Scarsdale, N. Y.

Below: Asphalt Block Driveway, Residence of Loren N. Wood, Bound Brook, N. J.

ASPHALT BLOCK DRIVEWAYS

DRIVEWAYS of Asphalt Blocks are Driveways of Distinction.

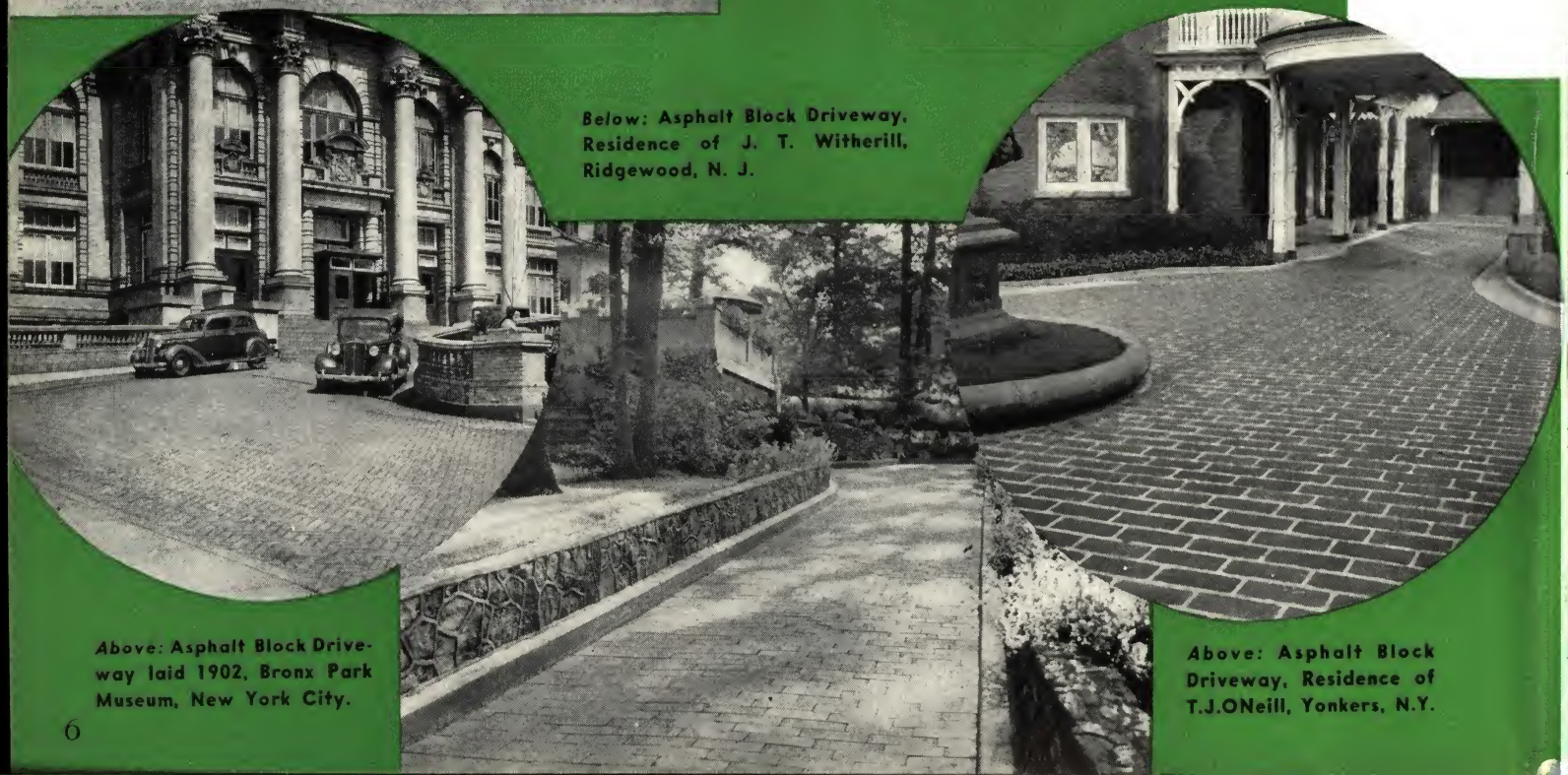
They may be laid in a variety of patterns: basket-weave, spaced joints, in longitudinal or lateral courses, and with skid-proof recessed joints for safety on ramps or in other hazardous locations.

An Asphalt Block Driveway requires no annual "treatments" to restore its surface. It has a built-in resistance to wear without sacrifice of cleanliness, smoothness or sightliness.

Surface adjustments and replacements if necessary, are simple to make, matching the adjoining areas without unsightly or patchy appearance.

TYPICAL USES

RESIDENTIAL
INSTITUTIONAL
INDUSTRIAL
ESTATE
COURTYARD
PUBLIC BUILDINGS



Below: Asphalt Block Driveway, Residence of J. T. Witherill, Ridgewood, N. J.

Above: Asphalt Block Driveway laid 1902, Bronx Park Museum, New York City.

Above: Asphalt Block Driveway, Residence of T.J.ONeill, Yonkers, N.Y.

ASPHALT BLOCK WATERPROOFING PROTECTION

EFFICIENCY of Waterproofing depends upon its impermeability. Ruptured fabric permits water infiltration with consequent disfigurement and damage to the structure beneath.

It is essential therefore that the delicate fabric be adequately protected if it is to render effective, uninterrupted service.

Hastings "Eightfour" Waterproofing Protection forms a dense, protective shield which cannot creep, shrink, curl or warp. It will not puncture or break under load and its unit construction provides sufficient surface flexibility to prevent expansion heaves or construction cracks.

TYPICAL USES

BRIDGES
VIADUCTS
PORCHES
VAULTS
LABORATORIES
ROOF DECKS

Above: **Laying Asphalt Block Waterproofing Protection Over Installed Waterproofing Fabric, Hackensack Avenue Bridge of Delaware, Lackawanna and Western Railway.**

Left: **Strips of Waterproofing and Asphalt Block Protection Course partly installed on South Viaduct, Delaware, Lackawanna & Western Railway Terminal Warehouse, Jersey City, N. J.**

Above: Hexagonal Asphalt Tiles, Grand Army Plaza, at Prospect Park, Brooklyn, N. Y.

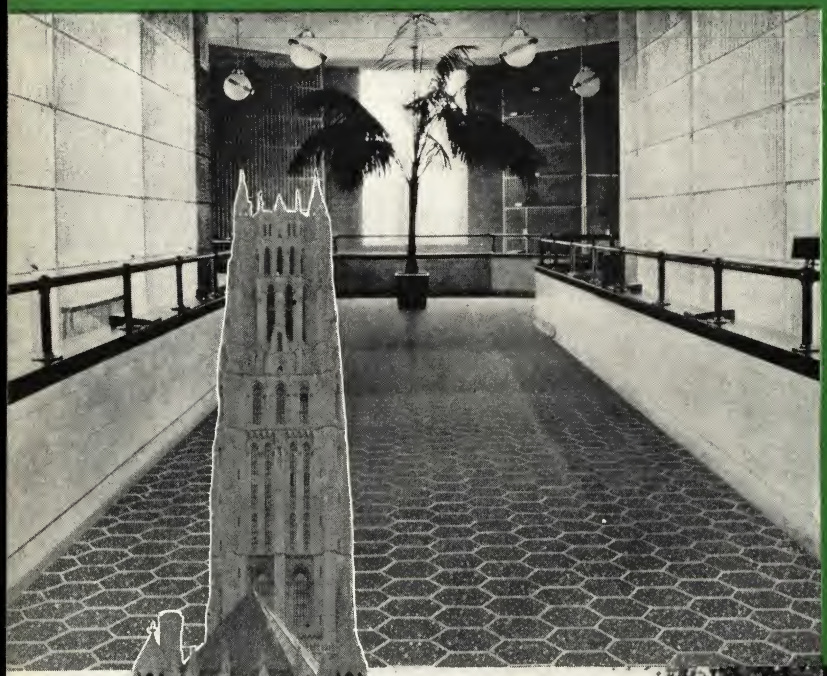
Below: Hexagonal Asphalt Tile Corridor, New Menagerie, Central Park, New York City.

HEXAGONAL ASPHALT TILES

FOR fifty years, Hastings Hexagonal Tiles have served the countless throngs who have found pleasure and relaxation in New York parks and public grounds.

Of soft grey tone color, they blend artistically with their surroundings. Their characteristic shape and size, their surfaces of variegated white and blue stone particles set in a contrasting dark background of asphalt, impart to the landscape a variety unobtainable with conventional flat surfaces.

Retaining beauty and utility with the passing years, Hastings Asphalt Tiles have a special appropriateness wherever landscaping plans call for long-lasting, distinctly different walks.



TYPICAL USES

WALKS
CORRIDORS
PLAZAS
PLAYGROUNDS
SWIMMING POOLS
TERRACES
SCHOOL GROUNDS

Below Left: Hexagonal Asphalt Tile Walk, Riverside Drive, Riverside Baptist Church in background, New York City.

Below: Hexagonal Asphalt Tiles on Central Park Marginal Walks, fronting Fifth Avenue, New York City.

ASPHALT BLOCK PAVEMENTS

HASTINGS Asphalt Blocks have survived a half-century of radically changed traffic conditions. Their resistance to wear and shock which served the horse drawn traffic of an earlier day, satisfy equally the present day concentration of heavy, high speed traffic.

Above all, the modern pavement must be safe. Improved car equipment, grade eliminations, easement of curves and other safety measures can not be wholly effective without Safe Pavements.

Asphalt Block Non-Skid Construction renders skid-free and safe, any paved surface where steep grades, curves, poor visibility, or other traffic hazards necessitate precautions against accidents.

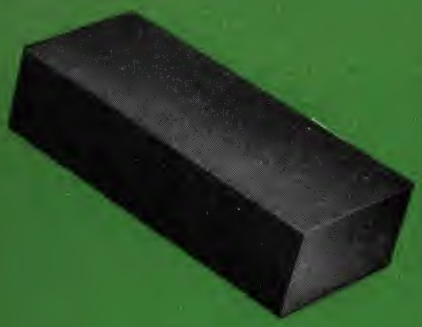
Above: Asphalt Block Roadway, State Highway Bridge over Shark River, Belmar, New Jersey.

TYPICAL USES

STREETS
ROADS
BRIDGES
AIRPORTS
STATION PLAZAS
INDUSTRIAL YARDS
PARKING LOTS

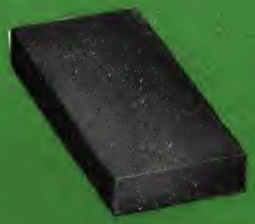
Right: Asphalt Block Non-Skid Construction, fronting Cornell University Medical Center, New York City.

Below: Asphalt Block Parking Space, New York Central Railroad Station Plaza, Hastings-on-Hudson, N. Y.

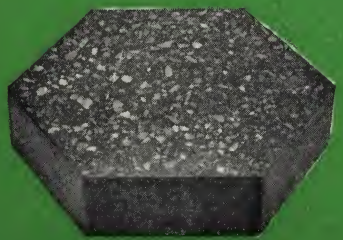


Asphalt Block
5" x 12" x 2½" (deep)

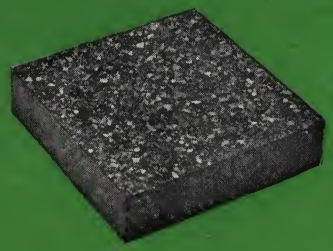
Asphalt Block
5" x 12" x 2" (deep)



"Eightfour" Block
8" x 4" x 1¼" (deep)



Hexagonal Asphalt Tile
—8½" between parallel
sides x 2" (deep)



Square Asphalt Tile
8" x 8" x 2" (deep)

HASTINGS
ASPHALT BLOCKS AND TILES

TECHNICAL DATA

Asphalt Blocks fall into THREE Service Groups as follows:

1. 5" x 12" PAVING AND FLOORING BLOCKS

For heavy duty floors, streets, roads, loading platforms, driveways, bridges, and all areas subjected to hard usage. They are furnished in these sizes: 5″x12″x2″ (deep), 5″x12″x2½″ (deep), 5″x12″x 3″ (deep).

Condition and type of supporting base, kind and volume of traffic or other service are the principal factors in determining the correct depth of blocks for the work to be performed.

2. "EIGHTFOUR" (8"x4") BLOCKS

For upper and lower floors, piers and loading docks where weight and floor thickness are necessary considerations, for roofs, drives, walks, parking areas and protection of waterproofing. Two sizes are available: 8″x4″x1¼″ (deep), 8″x4″x1½″ (deep).

3. ASPHALT TILES

For walks, courts, terraces in parks, cemeteries, schools, play areas, recreation piers, and public grounds. They can be supplied in two shapes and sizes: Hexagonal 8½″ between parallel sides x 2″ (deep), Square 8″x8″x2″ (deep).

Variation of the above sizes may be furnished for special applications.

ASPHALT BLOCK WEIGHTS

Size Inches	Lbs. Per Block	Lbs. Per Sq. Ft.	Lbs. Per Sq. Yd.	Net Tons Per Thousand Blocks
5x12x2	10.7	25.5	230	5.35
5x12x2½	13.6	32.4	292	6.8
5x12x3	16.0	38.2	344	8.0
8x4x1¼	3.6	16.0	144	1.8
8x4x1½	4.4	19.6	176	2.2
Hexagonal Tiles	10.8	25.2	277	5.4
Square Tiles	11.6	27.1	244	5.8

ASPHALT BLOCK QUANTITIES

Size Inches	*Number of Blocks		Per M Blocks		Per Ton		No. Blocks Min. C/L 60,000 #
	Per Sq. Ft.	Per Sq. Yd.	Sq. Ft.	Sq. Yds.	Sq. Ft.	Sq. Yds.	
5x12x2	2.4	21.5	423	47	78.3	8.7	5607
5x12x2½	2.4	21.5	423	47	62.1	6.9	4412
5x12x3	2.4	21.5	423	47	52.2	5.8	3750
8x4x1¼	4.44	40.0	225	25	125.1	13.9	16670
8x4x1½	4.44	40.0	225	25	102.6	11.4	13640
Hex. Tiles	2.33	21.0	432	48	79.2	8.8	5555
Sq. Tiles	2.25	20.2	441	49	73.8	8.2	5172

*Figures given make allowance for normal wastage in cutting and fitting.

CONDENSED SPECIFICATIONS

ASPHALT BLOCKS: The Blocks shall be composed of crushed graded, trap rock or equally suitable hard rock, mineral dust and asphaltic cement.

Blocks shall: contain not less than 7% of bitumen: be formed under pressure of not less than 4000 lbs. per sq. in.; show absorption under vacuum test of not more than one-half of one percent by weight; have a specific gravity of not less than 2.40.

ASPHALT BLOCK FLOORS AND PAVEMENTS: Upon the foundation shall be spread a bituminous or sand-cement mortar bed, struck to a smooth, uniform surface ½" to ¾" in thickness. Upon this bed the blocks shall be laid tightly together with end joints broken by a 4" lap. The surface shall be rolled or otherwise trued after which asphalt emulsion shall be applied to the joints and a layer of clean fine sand broadcast over the surface.

On screeded foundations, free from surface inequalities, the bed may be dispensed with and the blocks laid directly on the foundation in an asphalt mop coat.

ASPHALT BLOCK ROOFS: The blocks shall be laid on a bituminous bed brought to a smooth uniform surface, approximately ¾" in thickness. After the blocks are laid, asphalt emulsion shall be applied to the joints followed by a layer of clean, fine sand spread evenly over the finished surface.

ASPHALT BLOCK WATERPROOFING PROTECTION: After the waterproofing fabric has been placed, the blocks shall be laid directly on the final mopping of asphalt over the waterproofing, with tight joints and uniform top surface. The asphalt block protection shall then be given a mop-coat of hot asphalt or asphalt emulsion.

ASPHALT BLOCK: NON-SKID CONSTRUCTION: Over the foundation shall be spread a bed of sand-cement mortar of an average thickness of not less than ½". The blocks shall be laid on the bed one row at a time with strips about ⅜" wide between courses. After laying, spacing strips shall be removed and the joints filled with cement grout, which before setting shall be raked to a depth of about ⅜" leaving recessed lateral joints about ½" wide and ⅜" deep.

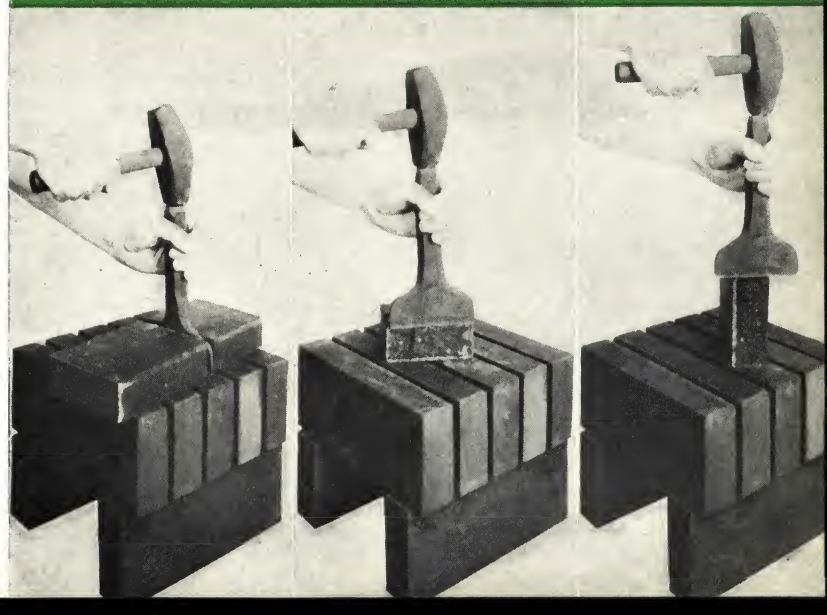
ASPHALT TILES: The Tiles may be laid on any well compacted base, preferably clean steam cinders or sand and gravel.

Over the foundation shall be spread a bed of sand or lean sand-cement mortar, about 1" in thickness, struck to uniform top surface, upon which the Tiles shall be laid with close joints or with spaced joints filled with cement grout. Beginning Course shall be laid with whole and half tile alternately, and closing course with cut pieces of required size and shape. When laid with close joints, fine sand shall be brushed over the surface until joints are filled.

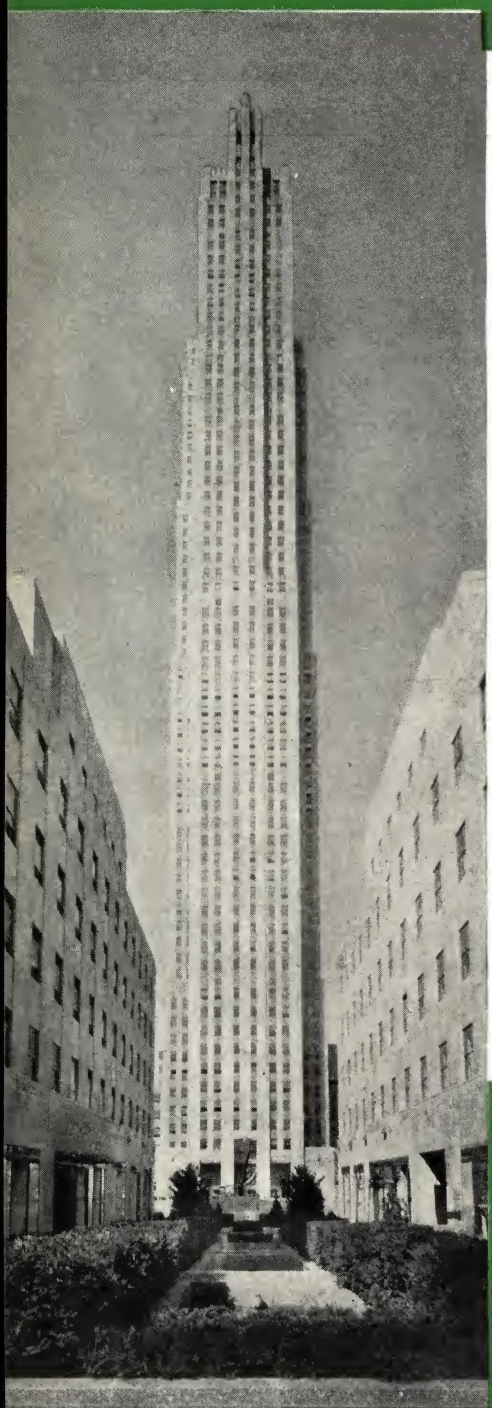
Preparing Bed for Laying Asphalt Blocks

Laying Asphalt Blocks

Cutting Asphalt Blocks



HASTINGS
ASPHALT BLOCKS AND TILES



Left Above—Naval Supply Base, Brooklyn, New York, Asphalt Block Floors

Center Above—Texas & Pacific Freight Terminal, Ft. Worth, Texas, Asphalt Block Floors and Shipping Platforms

Right Above—Federal Office Building and Post Office, New York City, Asphalt Block Floors and Drives

Left—Rockefeller Center, New York City, Asphalt Block Non-Skid Construction Traffic Ramp.

In the foregoing pages, the use of Hastings Asphalt Blocks in various typical installations has been illustrated. There are many other purposes not within the scope of uses enumerated, to which Asphalt Blocks are equally well adapted.

Our engineering staff will be glad to cooperate in developing plans for the application of Hastings Asphalt Blocks not only to those projects where their use would normally be indicated, but also to those projects which involve unusual construction or service features and which, therefore, may require special treatment.

THE HASTINGS PAVEMENT COMPANY

Executive Offices

25 BROAD STREET · · NEW YORK CITY

Plant

HASTINGS-ON-HUDSON, N. Y.

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SERVICISED PRODUCTS CORPORATION

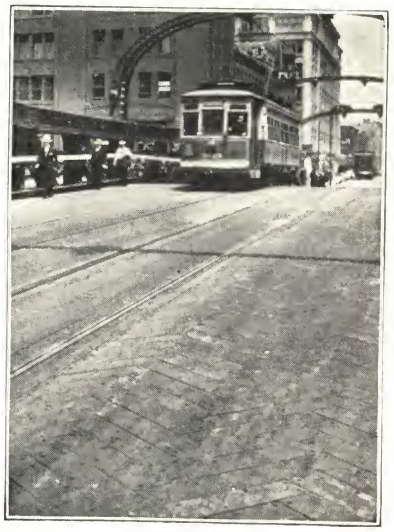
Industrial Asphalt Planking, Expansion Joints

6051 West 65th Street
CHICAGO, ILL.

For Servicised Rubber Tile Flooring, Roofing and Greenhouse Siding, see File Index

SERVICISED ASPHALT PLANK

This product, while originally made to serve as bridge flooring, is largely used as a flooring material in factories, warehouses, machine shops, and on loading platforms. Promenade roof decks offer an ideal place for the installation of asphalt planking, also basement floors, particularly when used for recreation purposes. Asphalt planking also is used to lay temporary sidewalks, which can be moved as required.



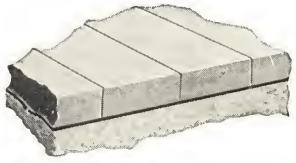
Asphalt planking is the ideal material to put over old floors which need renewing and can be laid over most any type of floor whether concrete, brick, wood, or steel.

Our Engineering Department will gladly give you the benefit of our experience if you submit your flooring problem to us for recommendation.

Servicised Asphalt Planking is made in various sizes, and while regularly furnished with straight cut edges, can be made with shiplap edges.

Servicised Industrial Flooring

This is a special grade of asphalt plank made for use on floors which are subjected to extreme loads. While made hard enough to resist extreme moving or standing loads, it is nevertheless a resilient material and any slight indentations of the surface which may occasionally appear will readily adjust themselves under heavy traffic. This type of flooring actually is self-healing and improves with age and usage. It is made in slabs measuring 12 in x 24 in. and it can readily be handled and applied to the floor without the employment of expert labor.



Servicised Plank on Concrete

Servicised Plank on Wood

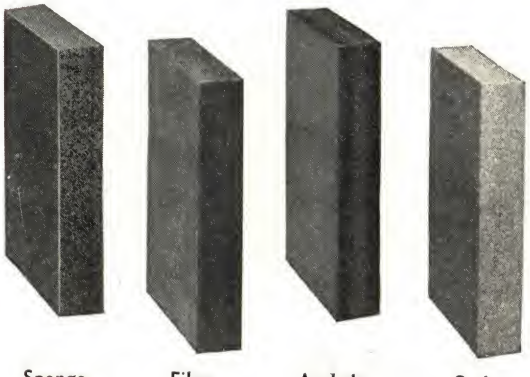
SERVICISED EXPANSION JOINT FILLERS

The changing trend from the extruding type of joints to the non-extruding type has been pioneered by the SERVICISED PRODUCTS CORPORATION. Architects and engineers, over a period of fifteen years, have approved and used Servicised products. All have specific fields of application and when correctly installed give exceptionally long and satisfactory service. Selection of the proper type of expansion joint for each particular job is important. Our specifications for each particular job are available for the asking. Our Engineering Department knows the details of your special requirements and will be glad to co-operate with you.

Aside from the various premoulded joint fillers listed in the next column, we manufacture various compounds prepared for joint filling purposes. Our gray or cement color latex compound is adaptable for building work because of its neutral color and positive adhesion to concrete, eliminating open joints.

Our premoulded rubber joint filler is also made in gray or cement color and we are prepared to make the same product in other colors to match stone or colored cement as required.

Extruding and non-extruding types are:



Sponge Rubber | Fibre | Asphalt | Cork Rubber

67

Premoulded

(1) Felt Sided Asphalt Joint—Prepared from a mixture of high melting-point bituminous materials, having a fibre content and reinforced on the sides with a saturated felt. This joint, together with our Type B expansion joint, is the standard Servicised product, and these two types of joints are of the extruding type.

(2) Fibre Board Joint—A resilient, non-extruding, fibre board, impregnated with a volatile saturant, leaving a residue of waterproofing after evaporation, sufficient but not enough to retard resiliency in the product and at the same time waterproof the fibre.

(3) Sponge Rubber Joint—A highly elastic, non-extruding joint, having felt sides and meeting engineering requirements.

(4) Cork Rubber Joint—An elastic, non-extruding, cork joint, in which the particles of cork are surrounded with a rubber coating, giving the joint great resiliency, lasting qualities, and making it non-extruding in nature.

FREDERIC BLANK & COMPANY, INC.

New York Central Building, 230 Park Avenue, NEW YORK

Won't Fade **Salubra** *Will Wash*

REG. U. S. PAT. OFF.

Wall Covering
"Oil Paint by the Roll"

Salubra — Architecturally Significant

Salubra is a permanent wall finish which at once completes the structure and decorates the wall. The architect who specifies Salubra finishes his building *structurally,* decoratively and permanently.

The manufacturing of Salubra was not an accident. A definite objective was sought which would eliminate the disadvantages of paint and other wall treatments and produce a finish to dress the wall structurally, and to provide decoration in a permanent form architecturally correct. It was a purely mathematical problem laid down for scientists to achieve by addition and subtraction.

Unmatchable Physical Properties

Briefly, Salubra is the equivalent in protective surface to six coats of oil paint on a zinc base, impregnated in parchment. Thus, it is oil paint in roll form and is applied like ordinary wall paper. The raw materials and secret formulae for its colors are revolutionary to such a degree that in fifty years no satisfactory copy of it has neared achievement. Salubra is non-porous and waterproof.

Scrubbing with soap and water cleans Salubra

Why Salubra is Structural

Salubra is structural because the parchment background affords permanent protection to the wall surface. Once applied, it becomes a part of the wall, does not come off, can be removed only by cutting its surface as with paint. It seals the pores of the plaster or other surfaces to which it may be applied and in one operation completes and decorates the structure of the wall by giving texture, color or design, as desired, lending individuality to the composition while allowing the interior to retain its architectural and structural significance. It prevents the unsightly appearance of fire cracks. Unaffected by climatic conditions, heat and cold, Salubra neither peels, nor scales. It can be perfectly butted and shows no seams. Its composition and texture are uniform because produced by laboratory methods. Thus, it enables the architect to know his specification is mathematically correct beforehand—something he cannot control in painted surfaces dependent on a human element.

Outstanding Practical Advantages

Salubra is resistant to dust, soot and odors; and, since Salubra is non-porous, it can be affected only by surface dirt and stains. These *can* and *should* be scrubbed with brush, soap and water to restore original freshness whenevernecessary. Unlike "washable" wall papers, its scrubability is not obtained by a superficial application, but is inherent in the material itself. The architect and owner can thus rest assured that the wall surfaces will remain always in the same proportion to the architecture that was originally intended.

The oil colors, which have been especially compounded to resist light, guarantee true fadelessness which eliminates streaking and fading. Since fadelessness means constant maintenance of color values, a Salubra interior will maintain its freshness and beauty for years to come as originally planned. Damage can be readily repaired by invisible seamless patching. Salubra is sanitary. It cannot be eaten or undermined by vermin.

Salubra comes in roll form. It can be installed quickly and easily in a fraction of the time required for painting, without the inconvenience of obnoxious odors. It permits the use of the room the same day it is applied to the wall.

Salubra is Economical

The cost of any structural decorative treatment must be considered in relation to its durability as well as to its maintenance. The initial cost of Salubra is no higher than good paint, and is well within the average budget available for good work. Its *cost to use,* which involves the capital investment, duration of service, maintenance and repairs, taking into consideration its physical properties, stamps Salubra as the most economical wall finish. If preference should be given to materials requiring a minimum of upkeep, the architect can *conscientiously* specify Salubra. Its upkeep reduces to almost nothing. It will maintain the wall in structural and decorative originality and permanent freshness. Periodic redecoration is unnecessary and recurrent outlays for material and labor disappear.

Salubra is Decorative

Since walls form so important a part in room structure, surfaces must be regarded in relation to architecture and not as unrelated applied ornament. Texture, color and design become crucial to the extent of perfecting or robbing the beauty and individuality of architectural lines and values. Salubra offers the widest range of colors, textures and patterns available in any wall treatment. Salubra is designed by prominent artists and architects of international repute who know not only decorative composition, but architectural design as well. Desired effects are pre-determined, studied, and as an additional protection are tested before being produced. This accounts for the fact that unless a fundamental error is made in the selection, a Salubra interior impresses favorably because the lines, combination of colors and the entire composition are correct.

FEATURES AND ADVANTAGES OF SALUBRA WALL COVERING

"Plastic Paint Armor" Impresses by Its Sturdiness

The thickness of zinc paint gives it durability. It will not soil so readily as a smooth surface. Consequently the cost of upkeep is reduced to a minimum. Its texture, while dressing the wall, precludes the appearance of seams and permits invisible patching. Its strong background gives additional protection to the plaster and prevents the appearance of fire lines and fire cracks.

It is non-porous — does not absorb odor. It is verminproof —it is washable, i.e., scrubable —its fadelessness is insurance against depreciation.

Among the large assortment of plastic paint surfaces in the Salubra collection you will find the right texture to solve your individual problems.

Textures and Designs for Any Type of Decoration

Salubra offers thousands of patterns in colors and designs to harmonize with every type of decoration, Period or Modern. There are friezes and scenic murals. Salubra cannot fade under exposure to sun or artificial light. It has all the protective and sanitary advantages of paint and is hung like wall paper.

Salubra reduces upkeep costs — scrubbing with brush, soap and water removes spots and restores all the original beauty of color and design. It is unaffected by heat, cold, moisture or dryness.

Salubra saves time—completes the structure of the wall and decorates it in one operation. It enables the architect to visualize the completed scheme before application is made with no later variance.

Salubra is the logical finish to wall structure—a wall covering with proven merits.

Samples to Show Character, Variety of Texture and Quality of Oil Paints

Whether requirements call for plain or textured surfaces, period or modern treatment, the exact one can be found in the Salubra Collection which contains thousands of designs.

Salubra is Adaptable Anywhere

Salubra's practical and decorative values are adaptable to *any type of building*. Because it possesses so many structural, decorative, practical and economical advantages, and because it is available in such a multitude of interesting surfaces and patterns, Salubra is the logical finish to the wall structure for every room in the house, or in any other type of building—apartment houses, office buildings, hotels, hospitals, stores, theatres, clubs, colleges, restaurants, banks, etc., where it has been successfully used.

All Qualities Are Proven

The architect who specifies Salubra has an exact check on his cost and specification and permanently protects his client and the relative value of his finished structure. Salubra has earned an international consumers' acceptance. It is a product of proven merits. For fifty years it has been specified by leading architects to the complete satisfaction of the user. Its dependability is not based on mere promises. It has been conclusively demonstrated as witnessed by large installations in the most important structures in every field, under every condition, both here and abroad. You can convincingly justify its use to your clients.

Service to Architects

Some architectural firms have established a department to answer clients' questions about interior decoration. To architects who do not find it practical to do this but wish to extend this service to their clients, we place our showroom and all its facilities at their disposal. We invite them to submit their decorative problems, because our co-operative service is of tangible value. It will simplify their task. We furnish estimates from blueprints, we supply samples and whatever other helpful information and assistance may be needed to carry out their ideas to a creditable solution. Our recommendations are based on a wide and practical experience and are guided not only by decorative requirements, but also by practical consideration. This service is cost-free and entails no obligation whatsoever on their part.

Wherever an atmosphere of luxury and refinement is desired, Tekko is the logical choice for wall decoration.

Tekko is available in two distinct finishes or textures. Designs for authentic period interiors are made with a satin-like sheen, giving the effects of fabrics. For interiors in the modern manner, Tekko is available in an untarnishable metallic surface.

Tekko
REG. U.S. PAT. OFF.
Wall Covering

Tekko is not a substitute for expensive fabrics, but an improvement over them. It expresses their decorative ideals, yet unlike them its surface is impervious to dust, soot and odor. It is a permanent treatment, yet its initial cost is but a fraction of that of silk and other fabrics.

Tekko does not fade and can be scrubbed with brush, soap and water. It is applied to the wall in a manner similar to good wall paper.

The Tekko Collection includes thousands of designs and colors appropriate for any type of interior when the ultimate in luxury is desired.

Representative Installations in Every Building Field

Hotels—Palmer House, Chicago, Ill.; Ritz-Carlton Hotel, Boston, Mass.; Waldorf-Astoria, N. Y.

Hospitals—Columbia Presbyterian Hospital (Medical Center), and New York Hospital (Cornell Medical Center), New York, N. Y.

Clubs—Union League and Harvard Clubs, New York, N. Y.

Universities—Yale University, New Haven, Conn.; University of Chicago, Chicago, Ill.

Apartment Houses—Century and Majestic Apartments, New York, N. Y.

Office Buildings—New York Telephone Co. and New York Central Buildings, New York, N. Y.

Theatres—Radio City Music Hall, New York, N. Y.; RKO Theatre, Denver, Colo.

Stores—Showrooms—Marshall Field & Co., Chicago, Ill.; Richard Hudnut Co., New York, N. Y.

Y. M. C. A. Buildings—Lawson Y. M. C. A., Chicago, Ill.; Y. M. C. A., Akron, Ohio.

Residences—Thousands of homes throughout the country.

CLOPAY CORPORATION

1319 York Street, CINCINNATI, OHIO

Duray Scrubbable Wall Paper, Clopay Window Shades
Fabray Washable Window Shades

DURAY

SCRUBBABLE WALL PAPER

FOR

HOMES . . . APARTMENTS . . . HOTELS . . . AND . . . OFFICES

Sold by leading Decorators, Department Stores and Wall Paper Stores from Coast-to-Coast

Duray Looks Like Finest Wallpaper

Has the rich, dull finish and comes in the same size rolls as wallpaper. It is applied like wallpaper and just as easily. But DURAY is 100% washable . . . actually "scrubbable" with soap and water.

How Duray Is Made

DURAY is a new type of wall covering. For the first time the style and finish of fine wallpaper is combined with the washable advantages of "oil-cloth" type covering or paint. For a long time the need for such a combination was apparent and the makers of DURAY developed the process for making it. Fundamentally the process is this . . . a paper base is first coated with the equivalent of three coats of enamel. Any color is possible. The coated paper is then baked under heat forming a waterproof, stain-proof base coating. Due to the special composition of the enamel, the surface is dull and not "shiny." The designs are then printed on top of the enamel in washable lacquer-type inks. The finished product is then thoroughly inspected for flaws, and cut into standard size wallpaper rolls. To all appearances DURAY is a fine wallpaper, but more than that, DURAY is 100% washable . . . as easily washed as "oil-cloth" type covering or paint.

Hang Duray Like Regular Wallpaper

DURAY needs only the usual preparation and wallpapering equipment. While DURAY's outer surface is waterproof, the under-surface reacts to paste in the same manner as wallpaper and smoothes out on the wall with a minimum of labor. DURAY is not heavy to handle and takes no longer to hang than regular wallpaper. Actually DURAY costs less to apply because its washable surface means practically no spoilage from dirty equipment, finger-marks or paste marks.

Secret of Duray's Washability

To DURAY's special paper base is applied the equivalent of three coats of a special enamel composed of treated oils and pigments. This is then baked dry under heat. The press illustrated is printing the DURAY patterns on top of the enamel base in washable lacquer-type inks.

Cost of Duray

In figuring costs, 3c a square foot is DURAY's average. Hanging charges vary in different sections of the country. But in figuring DURAY the hanging charge is usually less than 1c a square foot. Another way to figure is less than ½ the cost of hanging canvas backed coverings. (These are consumer costs, and retail prices.)

Duray is not Expensive . . . *Is 100% Washable!*

Rub butter or any grease on DURAY. See how it washes off without a stain or blemish. As fresh and new looking as ever. Could any other wallpaper pass this test?

Dirt cannot grind into DURAY'S rich surface . . . but washes off completely leaving no rings or streaks. Could any other wallpaper fail to smudge?

DURAY'S soft finish scrubs clean without leaving "fuzzy" watermarks to catch dirt. No rings, no streaks, no blemishes. Could any other wallpaper take this punishment?

TEST DURAY'S WASHABILITY YOURSELF WITH THESE SWATCHES

Make any test you want. Try the tests illustrated above. You'll find that DURAY'S rich, dull wallpaper surface washes as easily as tile . . . with soap and water, a cloth or *even a brush*. Note too, that ink, finger-marks, grease, soot, dirt and grime wash right off and back comes DURAY'S lovely finish, as clear and "new-looking" as ever . . . No streaks, watermarks, fuzziness or blemishes to show it had ever been washed. Yet, DURAY is not expensive. And there are 150 beautiful patterns and plain colors to choose from . . . all created by America's ace designers.

No. 477G

No. 484C

WRITE FOR 1938 SWATCH BOOK WITH RECOMMENDATIONS BY CHRISTINE HOLBROOK

Christine Holbrook is the nationally known Home-Furnishings Editor of BETTER HOMES AND GARDENS Magazine. Every DURAY pattern carries her recommendations as to its correct use with various rooms and furnishings. A valuable source book of information.

COLUMBUS COATED FABRICS CORPORATION

DEPARTMENT WS-8
COLUMBUS, OHIO

For Bontex, Washable Window Shade Cloth, see File Index

WALL-TEX

Decorative Wall Canvas

For Homes, Apartments, Commercial, Institutional and Public Buildings

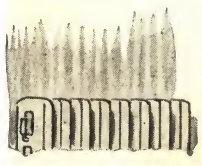
WASHABLE, CRACK-FREE CANVAS COVERINGS FOR WALLS AND CEILINGS

Wall-Tex serves architects in many ways. It is unique among wall coverings because of its practical features which give enduring beauty to the decoration. Furnished in an extensive range of designs, colors and patterns, its widest use is as a complete decorative material. The different types of Wall-Tex and their wide application in decorative treatment are explained on this and the following page.

Basically Different

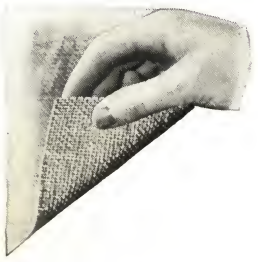
There are two outstanding points of difference between Wall-Tex and non-fabric wall coverings—the strong, tough Wall-Tex canvas base and the durable, honestly washable Wall-Tex surface. You can see and feel the difference by comparing the Wall-Tex swatches (on the following page) with other wall coverings. You can prove the honest washability of Wall-Tex by washing these swatches with soap and water. The heavy background coatings are fused with the canvas and the beautiful Wall-Tex designs are printed in time-resisting colors of the finest quality. A durable surface—and a strong plaster-protecting canvas base.

Clean Walls All the Time

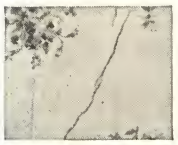


Circulation of air means circulation of dust and soot that start to coat new wall coverings the very day they are applied. These smudges quickly show above radiators and registers and around pictures on the wall. Soap and water removes all soot, picture marks and fingerprints from Wall-Tex. Cleaning this simple way (like washing porcelain) renews the fresh beauty and enlivens the colors to a degree that is impossible with many other types of wall covering. Twice-a-year washing of Wall-Tex is customary to remove dust and soot. Spots can be cleaned away any time, as often as they appear. Thus Wall-Tex provides a higher standard of decorative beauty—makes it possible to have clean, fresh, attractive wall coverings season after season without the high cost of frequent redecorating.

No Plaster Cracks



In a recent survey, an amazingly high number of replies (88 out of 100) brought out the fact that housewives are thoroly disgusted with plaster cracks. Many of them told how they eliminated cracks—in new homes and old residences — in walls and ceilings by decorating with Wall-Tex and strengthening the walls with its strong, durable canvas base. Hotel owners go even farther. They tell how plaster frequently breaks around doorways from careless slamming of doors—and how the Wall-Tex canvas base prevents this trouble, saves plaster repairing and redecorating expense.



Perfect Base for Painting

When a change in decorative scheme may be desired, Wall-Tex should be left on walls and ceilings as a protective foundation. New paint, paper or any other decorative finish may be applied over the Wall-Tex canvas, and it will continue for many years as insurance against plaster cracks and blemishes. The Wall-Tex may be laid back to permit repairing of nail holes and other unavoidable scars, then re-applied before painting, leaving a smooth canvased surface.

Wall-Tex for Ceilings

Plaster cracks usually appear in ceilings first of all. By applying Wall-Tex, ceiling cracks can be prevented and less frequent redecoration of ceilings will be necessary. Beautiful ceilings, in any of the modern effects, can be obtained with Wall-Tex canvas coverings. Wall-Tex Stiffened Canvas, furnished in richly-textured stippled and grained finishes, is ideal for both ceilings and sidewalls. Wall-Tex Lining Cloth is a durable foundation material which can be painted or tinted to conform to any color scheme. Wall-Tex plain finishes are available in a wide selection of soft, clear pastels, excellent for ceilings or plain finish walls.

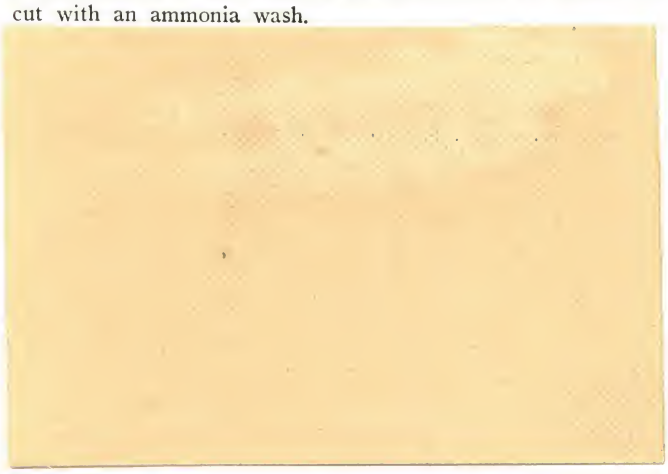
Wall-Tex for Every Decorative Treatment

On this page are three types of patterns from the Wall-Tex line. The full range of over 200 patterns includes a complete selection of plain and textural effects in plain colors; beautiful dull finish patterns for every decorative scheme in living rooms, dining rooms, bedrooms, halls, nurseries, dens and sunrooms; cheery glazed prints for kitchens, baths and other service rooms; luxurious metallic satinesques for formal settings; lining cloth and stiffened canvas as a foundation for painting—suitable Wall-Tex treatments for every type of room in every type of building.

Whether you are specifying wall coverings for homes and apartments, for commercial buildings, schools, hospitals or public buildings of any type—for new or modernized structures—you can recommend Wall-Tex with complete confidence. Its practical features for enduring beauty and long service make it a profitable investment for the owner of any building.

Application of Wall-Tex

Wall-Tex may be hung on any flat surface with perfect results. The method is much the same as hanging wallpaper. Any good commercial wallpaper paste may be used. Edges should be butted closely—Wall-Tex seams are invisible when properly matched. In brushing out the strip, the first movement should be from side to side rather than up and down. New walls should be sized thoroughly. Calcimined or dull-painted walls should be thoroughly washed and then sized. Glossy painted finishes should be steel-wooled or sanded or cut with an ammonia wash.



No. 3097—Wall-Tex Stiffened Canvas

Can be used without further decorating—or as a foundation for painting or to obtain attractive stipple effects. Ideal for tinted ceilings. Perfect protection against plaster cracks

No. 3033—Grained Dull-Finish Wall-Tex in Plain Colors

Full range of pastel shades for plain sidewalls and ceilings

Size of Roll—How to Hang

Wall-Tex rolls are 48 in. wide, 12 yds. long—16 sq. yds. to the roll, 4 times as much material as in a roll of wallpaper. Table shown here indicates the number of rolls of Wall-Tex required for common size rooms, with deduction made for usual sized openings.

To find the number of Wall-Tex rolls needed for the side walls of a room of any size, multiply the distance around the room in feet by the height of the room in feet. Deduct 20 square feet for each ordinary sized opening and divide by 128. To find the number of rolls needed for a ceiling, multiply the length of the ceiling by the width of the ceiling, in feet, and divide by 128.

Size of room ft.	Side walls with ceiling height of					Ceilings	Border needed yd.
	7 ft.	8 ft.	9 ft.	10 ft.	11 ft.		
8x12	2¼	2½	3	3¼	3½	¾	14
8x14	2½	2¾	3¼	3½	4	1	15
10x10	2¼	2½	3	3¼	3½	1	14
10x12	2½	2¾	3¼	3½	4	1	15
10x14	2¾	3	3½	3¾	4¼	1¼	16
10x16	3	3¼	3¾	4¼	4½	1½	18
12x12	2¾	3	3½	3¾	4¼	1¼	16
12x14	3	3¼	3¾	4¼	4½	1½	18
12x16	3¼	3½	4	4½	5	1¾	19
12x18	3½	3¾	4¼	4¾	5¼	1¾	20
14x14	3¼	3½	4	4½	5	1¾	19
14x16	3½	3¾	4¼	4¾	5¼	2	20
14x18	3½	4	4½	5	5½	2	22
16x16	3½	4	4½	5	5½	2¼	22

Cost of Wall-Tex

Cost of a regular dull or glazed print, like No. 3236, is 3.9c per sq. ft. Stiffened canvas, pattern No. 3097, is 3.4c per sq. ft. Grained, Dull Finish Wall-Tex, in plain pastel colors, like pattern No. 3033, is 3.6c per sq. ft. Wall-Tex Lining Cloth is 3.4c per sq. ft. Hanging charge, which varies slightly in different sections of the country, is approximately 2.5c per sq. ft. (These figures are consumer cost, at retail prices.)

No. 3236—Wall-Tex Dull-Finish Pattern

One of a wide range—in solid tones, stripes, plaids, scenics, florals—conservative and modernistic treatments

Write for Special Sample Book

Wall-Tex Canvas Wall Coverings are available at wallpaper dealers throughout the United States. Write direct to us for Wall-Tex sample book prepared especially for architects. Also ask for beautiful new portfolio showing rooms in color photography.

THE STANDARD TEXTILE PRODUCTS CO.

Manufacturers of Sanitas Washable Cloth Wall Covering

320 Broadway, NEW YORK, N. Y.

Sold by Wall Paper and Paint Jobbers, Dealers, Decorators and Painting Contractors All Over the United States

A Washable Cloth Wall Covering

Sanitas is a wall covering made on a cloth base, the surface of which is composed of not less than four coats of durable, fast color, real oil paint. It is made in a wide variety of finishes and designs or plain colors which are adaptable to both walls and ceilings of residences, apartments and public buildings.

A Damp Cloth Wipes it Clean

Sanitas comes to you a finished product and is impervious to moisture, grease and stains. By wiping off frequently with a damp cloth, with Sanitas Suds, or with a light soap solution not containing excessive alkali, it will remain in perfect condition.

Prevents and Conceals Plaster Cracks

Its firm strong weave helps to hold plaster intact and prevents cracks from developing in new construction. Applied to patched and cracked walls it will give an even, smooth job and prevent further cracks and breaks.

Permanence

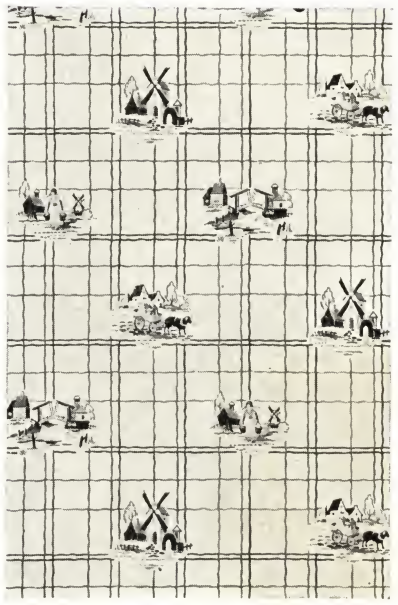
Sanitas neither cracks, tears, blisters, nor peels. It resists the accidental bumps and scratches which damage a less rugged material.

Ideal Base for Redecoration

If a change in design is desired in a room it may be had in two ways:

A new pattern may be hung over the first, or the decorator can paint over the pattern and then stipple, blend or stencil over this firm smooth surface.

SANITAS CLOTH WALL COVERING



Sanitas Decorative Coverings

Sanitas Decorative Coverings are styled for every room and for the taste of all. The Sanitas Sample book contains more than 130 patterns in which you can find Flat Finish coverings ranging from intricate conventional designs of stateliness and dignity to whimsical, dainty floral conceptions, or Enamel finish coverings for bathrooms and kitchens.

There is also a wide range of Sanitas Canvas Coverings and lining cloths, including:

Sanitas Canvas — a stiffened base for paint.

Sanitas Prepared Canvas — pyroxylin filled.

Sanitas Smooth Lining — foundation for further decoration.

Sanalining—oil filled muslin backing for paper, calcimine or paint.

Economize With Sanitas

The first cost of Sanitas is not much higher than other materials you can buy, but it is worth much to you to have wall coverings you can clean and that endure.

The cost of application is usually no greater than for other materials.

Sizes

Sanitas comes in 12-yd. rolls, 48 in. wide, but is priced in 3-yard units. Three yards of 48-in. Sanitas cover 36 sq. ft.

INSTALLATIONS IN ALL TYPES OF BUILDINGS

Hotels

Brighton, Atlantic City, N. J.
Knickerbocker, Atlantic City, N. J.
Ritz Carlton, Atlantic City, N. J.
Seaside, Atlantic City, N. J.
Shelburne, Atlantic City, N. J.
St. George, Brooklyn, N. Y.
New Yorker, New York, N. Y.
Plaza, New York, N. Y.
St. Regis, New York, N. Y.
Times Square, New York, N. Y.
Hollenden, Cleveland, Ohio
Ft. Hayes, Columbus, Ohio
Stevens House, Lancaster, Pa.
Arlington, Chicago, Ill.
McCormick, Chicago, Ill.
Palmer House, Chicago, Ill.

Public Buildings

Aetna Life Insurance Co., Hartford, Conn.
New York Life Insurance Co., Kansas City, Mo.
New York Telephone Co., Brooklyn, N. Y.
Davis Collamore & Co., New York, N. Y.
Goldman Sachs & Co., New York, N. Y.
New York Life Insurance Co., New York, N. Y.
Rex Cole (Showrooms), White Plains, N. Y.
Dines Furniture Store, Cincinnati, Ohio
Morgan Paper Co., Lancaster, Pa.
Strawbridge & Clothier, Philadelphia, Pa.
League of Nations Bldg., Geneva, Switzerland
Madison Square Garden, New York, N. Y.
Capitol, Harrisburg, Pa.

Banks

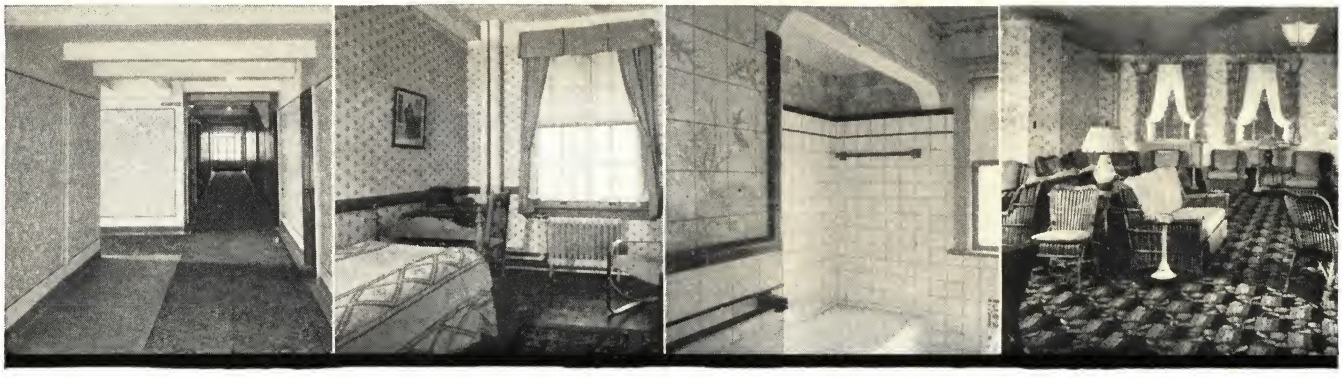
Bank of the Manhattan Co., New York, N. Y.
First National, Bethlehem, Pa.

Private Residences

Chester Conklin, Hollywood, Calif.
A. A. Alderton, Saginaw, Mich.
Mr. Black of Black & Decker Co., Atlantic City, N. J.
W. S. Westervelt, Glen Rock, N. J.
B. M. Duke Apt., 5th Ave., New York, N. Y.
Mr. Steinsick, Port Washington, N. Y.
F. A. Smith of Nickel Plate System, Fort Worth, Tex.
Nils Larson, Brooklyn, N. Y.

Theatres

Loew Theatre, Toronto, Ont., Can.
Earle Theatre, Washington, D. C.
Metropolitan Theatre, Washington, D. C.
Tivoli Theatre, Washington, D. C.
New Palace Theatre, Chicago, Ill.
American Theatre, Chicago, Ill.



H. B. WIGGIN'S SONS CO.

Manufacturers of Cloth Wall Coverings

233 Arch Street, BLOOMFIELD, N. J.

Products

FAB-RIK-O-NA CLOTH WALL COVERINGS.
KLING-KO-NA UNDERCOATING and SIZE.
(The words Fab-Rik-O-Na and Kling-Ko-Na are registered trade-marks.)

Fab-Rik-O-Na Finished Wall Coverings

Offered in textured fabrics of plain or patterned designs, various colors and color combinations, they are well filled, evenly colored, thoroughly shrunk and prepared for pasting to the wall.

30, 34 and 36-in. rolls contain 50 yds., wider widths, 30 yds.

Fab-Rik-O-Na Prepared Wall Coverings (To Be Painted)

These fabrics are manufactured in a variety of widths, weights and textures with surfaces carefully prepared to receive paint after having been hung. They are fully shrunk, and well backed, ready for pasting to the wall in the same manner as wall paper.

The heavier fabrics are especially suitable for wainscoting in schools, salesrooms, office buildings and hotels.

Method of Application—All Fab-Rik-O-Na Cloth Wall Coverings are applied to the wall with fresh flour paste. Details with directions are contained in each roll of goods.

Kling-Ko-Na Undercoating and Size

A white powder prepared for use by adding water. For use in preparing walls for papering, painting or enameling, and over painted or varnished walls before hanging wall coverings. Also over dyed burlap or raw woodwork before painting.

Can be used on walls of hard or sand finished plaster, stucco, concrete and brick as well as on wall boards.

Service to Architects

We are prepared to co-operate with architects by offering quotations, special samples and practical suggestions for the use of our decorative products.

Distribution

Stocks of Fab-Rik-O-Na products are carried at Bloomfield, N. J. Shipments can be made direct, or deliveries made from any reliable jobbers located in the principal cities of the United States and Canada.

Suggested Specifications

General—All decorative and prepared canvas, burlap or other fabrics used shall be of the kind below specified and quality of those shown in the Fab-Rik-O-Na line of cloth wall coverings of the H. B. WIGGIN'S SONS Co. of Bloomfield, N. J., and equal to samples of this material on file in the architect's office.

Location—The above wall coverings shall be applied on ceilings and walls of the following.....

Application—After walls have been plastered in accordance with specifications for plastering, and are thoroughly dry, they shall be given a coat of Kling-Ko-Na Size manufactured by the same company.

Old walls shall be thoroughly cleaned and all cracks filled. All edges of cracks and patches shall be sandpapered to a smooth, level surface. Walls shall be made smooth and clean, and sized as above described.

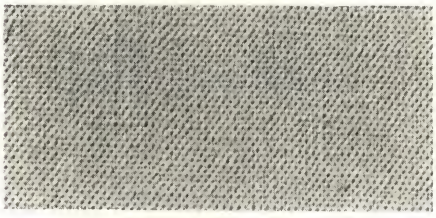
If the fabric is not to be painted, it is customary to apply a good grade of lining paper before hanging, allowing the paper to become thoroughly dry before applying the fabric.

The condition of the wall determines the necessity for a lining. Where the wall is in good condition, clean and free from hot spots, the lining may be omitted.

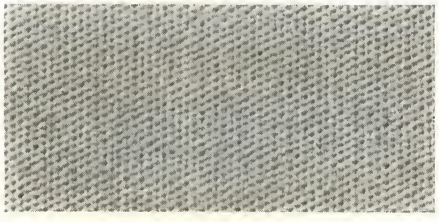
If the fabric is to be painted no lining is required.

The fabrics then shall be pasted to the wall with good, stiff, fresh flour paste. In the hanging edges of successive lengths are to be butted after having been trimmed to a true smooth edge. Printed directions packed with the goods when shipped shall be carefully followed.

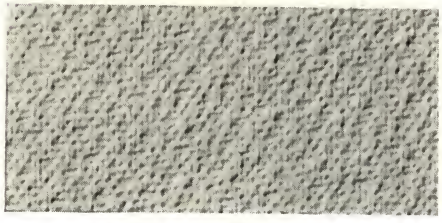
Painting—Where Fab-Rik-O-Na prepared goods are used, they shall be given ..... coats of paint as herein specified.



Wiggin's Wall Canvas
36, 54, 84 and 100 in. wide



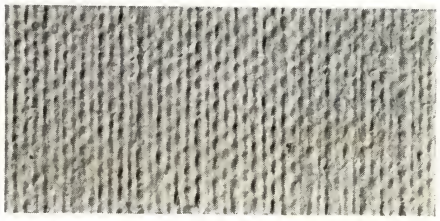
Prepared Canvas
36 in. wide



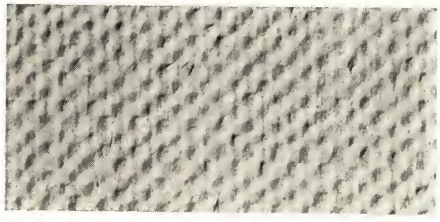
Stipple Canvas
33 in. wide

Hanging Fab-Rik-O-Na Cloth Wall Covering

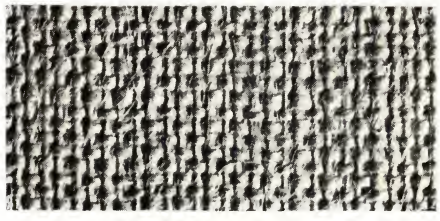
All Fabric Textures are Reproduced Actual Size



No. 10 Filled Canvas
36 in. wide



Prepared Burlap
36, 54 and 72 in. wide



No. 2 Filled Burlap
36 and 54 in. wide

CASEIN COMPANY OF AMERICA, INC.

350 Madison Avenue
NEW YORK, N. Y.

CASCO WATERPROOF GLUES AND CEMENTS

CASCO-RESIN CASCO GLUE CASCO WALL SEALER CASCO LIQUID CEMENTS

Casco-Resin

An urea-formaldehyde condensation product. For bonding wood to itself, to fibreboards, resinoids, etc. Has the unique property of firmly bonding fireproofed wood. Is set by low temperature hot pressing; also set by cold pressing, thus avoiding development of stresses from high pressure and temperatures that cause warping of panels, and embrittlement of veneers. The bond being waterproof and moldproof, makes possible the safe use of veneered doors, paneling, etc., under conditions of outdoor, or unusual indoor exposure.

Names of manufacturers of Casco-Resin bonded veneered doors, panels and plywood furnished on request.

Resin File of Complete Information Sent on Request.

Casco Glue

A dry powder casein, water-resistant glue, mixed in cold water without heat; for bonding wood to itself, or to resinoids, fibreboards, etc.; for laying linoleum; erecting fibreboards, etc. Used in the manufacture of plywood, flush doors, furniture, etc. Made in a variety of formulas suited to all gluing operations.

Casco Wall Sealer

A dry powder casein size, mixed in cold water without heat. Used as a size on new or old plaster; on paint; fibreboards, canvas, etc. Stops suction, fills fire cracks, neutralizes alkaline wall areas.

Casco Liquid Cements

Unique combinations of liquid casein and rubber, supplied in ready-for-use form. Used for cementing Flexwood, Formica paneling, rubber tile and wall covering, linoleum floor and wall covering, etc., to any wall or floor surface. Application may be by brush or trowel.

Special properties of Casco Liquid Cements are: water vehicle, non-inflammable, may be diluted with water; high coverage, 1 gal. erects 120 to 150 sq. ft. of Flexwood; 160 to 180 sq. ft. of linoleum wall covering, 200 to 225 sq. ft. of sheet rubber; adheres to all surfaces; combines great strength with permanent flexibility.

Special cements are formulated for specific needs.

Inquiries are invited from manufacturers of building materials who require special erection adhesives.

Typical Installation of Flexwood

Courtesy United States Plywood Company, Inc.

"After searching for years, the difficult problem of erecting Flexwood has been finally solved by the use of your Casco Liquid Cement. It produces a bond which is at once permanent, highly water-resistant and elastic—its elasticity being of particular importance for bonding materials with unlike coefficients of expansion.

UNITED STATES PLYWOOD COMPANY, INC."

Typical Installation of Sheet Rubber Flooring

Courtesy Voorhees Rubber Mfg. Company, Inc.

"The cement, which you developed more than three years ago, to meet our problems on bonding Sheet Rubber to walls and floors, has been 100% effective. Under no circumstances will this Company approve any other adhesive for this work.

VOORHEES RUBBER MFG. COMPANY, INC."

INLAND STEEL COMPANY

38 South Dearborn Street, CHICAGO, ILL.

DISTRICT OFFICES
DETROIT, MICH. MILWAUKEE, WIS. KANSAS CITY, MO. ST. LOUIS, MO. ST. PAUL, MINN.

Condensed List of Products

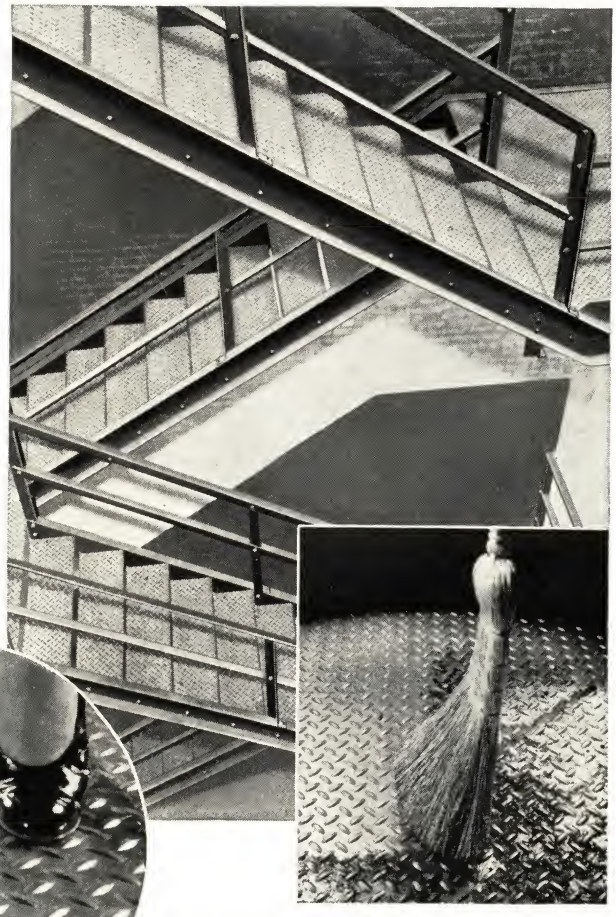
Inland Steel is one of the country's largest producers of rolled steel products, with complete control over all raw materials.

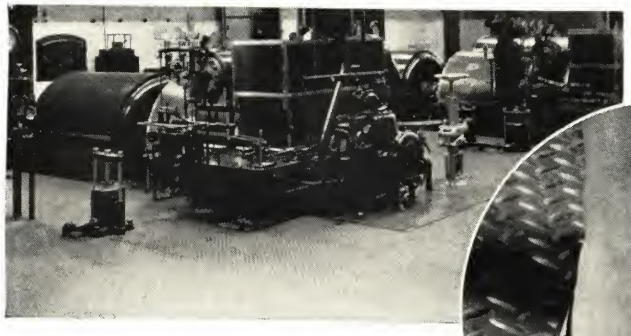
Inland's wide range of products includes: *Structural Shapes, Bars, Plates, 4-Way Floor Plates, Hot and Cold Rolled Sheets, Galvanized Sheets, Cold Reduced Tin Plate, Concrete Reinforcing Bars, Rails, Piling, etc.*

In addition to new billet steel, Inland also produces concrete reinforcing bars, small shapes and fence posts from *rail steel.* These products are lower in price because of lower material costs.

Inland Service

Inland has established a reputation for well co-ordinated personal service. Inland field men and metallurgists are constantly available to aid the buyer in selecting and ordering the product best suited to his purpose.





Inland Copper-Alloy Steel

Inland Copper-Alloy Steel endures four to five times as long as ordinary carbon steel when exposed to atmospheric corrosion, and is therefore particularly recommended for outdoor applications. It is produced by the addition of pure copper to the hot metal in the open hearth furnace. Inland Copper-Alloy can be specified for practically all Inland products at small extra cost.

Write for the Inland Copper-Alloy Booklet which gives complete information and reports of corrosion tests.

Inland Reinforcing Bars

Inland rolls a complete line of new billet and rail steel reinforcement bars. Bars are cut to length, bent, bundled and tagged; also spirals and spacers.

Inland's complete and dependable Engineering Service assures material ready for immediate use.

Inland 4-Way Floor Plate

This product is rolled steel plate with a 4-Way safety tread which was originated by Inland.

Has Many Uses—It is widely used structurally for the making of fireproof and long wearing steel floors, platforms, stairs, walkways, and hatchways; also as a floor covering material where safe, heavy-duty service and freedom from maintenance costs are required.

4 Important Advantages—

4-Way Safety—The exclusive Inland pattern provides equal traction for foot or wheel in all directions. The projections are of scientifically determined height and are curved and spaced so as not to catch the smallest heel or toe.

4-Way Drainage—Inland 4-Way Floor Plate drains readily in all four directions. It is also easily kept clean, since the curved projections offer no pockets to catch dirt or resist sweeping.

4-Way Stiffness—The projections, overlapping at right angles, reinforce the strength of the plate and provide equal rigidity lengthwise and crosswise.

4-Way Matching—With the Inland pattern, plates can be matched on all sides and at right angles, to form an attractive, continuous pattern with minimum waste of material.

Easily Fabricated—Inland 4-Way Floor Plate is readily bent, cut and shaped to fit all requirements. It welds easily. Inland Copper-Alloy Steel is recommended for long-life outdoor use and places where corrosion is a factor.

Sizes—Inland 4-Way Floor Plate is made in two sizes of pattern. The small pattern has projections ¾ in. long, in thicknesses from 16-gauge to ⅜-in.., in widths up to 60 in. and lengths to 300 in.

The large pattern has projections 1¼ in. long, in thicknesses from $\frac{3}{16}$ to ¾ in., in widths up to 72 in. and lengths to 600 in.

Stocked by Distributors—Inland 4-Way Floor Plates are stocked by leading distributors.

Write for the new Inland 4-Way Floor Plate Book.

CARNEGIE-ILLINOIS STEEL CORPORATION

UNITED STATES STEEL CORPORATION SUBSIDIARY

GENERAL OFFICES

PITTSBURGH, PA., Carnegie Building — CHICAGO, ILL., 208 South La Salle Street

DISTRICT OFFICES

BIRMINGHAM, BOSTON, BUFFALO, CHICAGO, CINCINNATI, CLEVELAND, DENVER, DETROIT, HOUSTON, NEW YORK, PHILADELPHIA, PITTSBURGH, ST. LOUIS, ST. PAUL, WASHINGTON

EXPORT DISTRIBUTORS: United States Steel Pro ducts Co., 30 Church Street, NEW YORK, N. Y.

PACIFIC COAST DISTRIBUTORS

COLUMBIA STEEL COMPANY

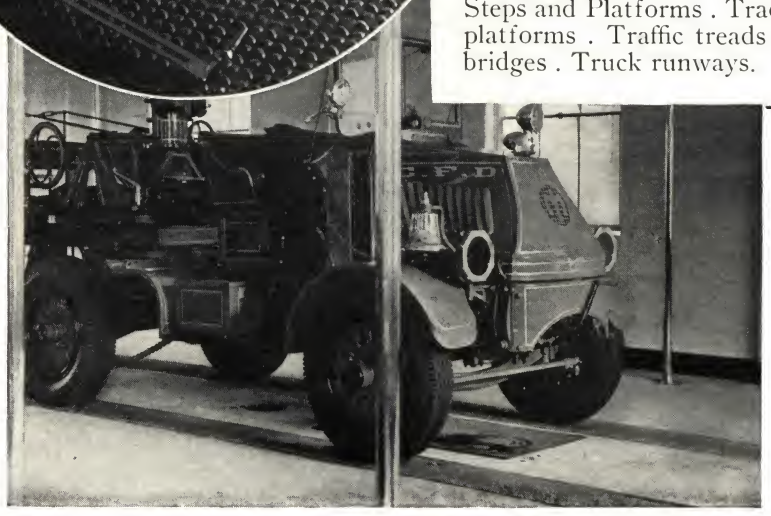
SAN FRANCISCO, LOS ANGELES, PORTLAND, SALT LAKE CITY, SEATTLE

U·S·S MULTIGRIP FLOOR PLATE FOR MODERN UNDERFOOT EFFICIENCY

U·S·S Multigrip Floor Plate is modern—in design, construction and appearance. Shown here are four applications of Multigrip—four reasons why architects and engineers have specified this symmetrical, wear-resisting flooring.

On the elevated footway of an ocean liner steaming out of New York harbor . . . on the deck of a traveling crane in a Pittsburgh factory . . . on the platform of a tractor in Iowa . . . on a highway bridge in California . . . in a Massachusetts laboratory . . . Multigrip adds to the life and safety of each installation.

U·S·S Multigrip Floor Plate is available in thicknesses from $\frac{3}{16}$ to $\frac{3}{4}$in., in widths from 6 to 84 in., and in almost any length desired.



Here Are a Few Uses for This Modern Floor Plate

Boiler room floors . Bridge floors . Concrete mixer platforms . Crane decks . Excavator decks . Expansion joints on bridges . Factory aisles . Fire escapes . Foundry floors . Hatch covers . Industrial footways . Loading platforms . Locomotive cab floors . Machine runways . Manhole covers . Oil Refinery galleries . Power-house floors . Ramps . Sidewalk openings . Stair treads . Steps and Platforms . Tractor platforms . Traffic treads for bridges . Truck runways.

AIR-LITE GRATING COMPANY

13035 Hillview Avenue
DETROIT, MICH.

VULCAN IRON & WIRE WORKS, Associated Company

REPRESENTATIVES

NEW YORK, N. Y., Middleton Metal Products Co., 101 Park Ave.
CHICAGO, ILL., The Loxit Company, 605 W. Washington Blvd.
CINCINNATI, OHIO, Central Steel & Supply Co., 626 Broadway
CLEVELAND, OHIO, The Mooney Iron Works Co., 3319 E. 80th St.
DETROIT, MICH., Wm. J. Binks, 13035 Hillview Ave.
ST. LOUIS, MO., Variety Building Products Co., 2615 DeKalb St.

See Classified Telephone Directories in Important Cities

PRODUCTS

GRATING and STAIR TREADS.

Also Woven Wire and Welded Wire Products; Stairs, Tanks, Bins, Sheet Metal Fabrication, Stampings.

AIR-LITE GRATING—D-B

This grating is designed to provide maximum underfoot support compatible with an "open" flooring. Diagonal bars provide an almost solid support for wheels of trucks and wheelbarrows in every direction. This grating may also be used for car and truck steps and platforms. Standard spacing of straight bars is 1¼ in. center to center of straight bars for bars ⅛ in. thick; center to center distance for $\frac{3}{16}$ in. thick straight bars is $1\frac{5}{16}$ in. Multiples of these spaces plus ⅛ in. in one case and plus $\frac{3}{16}$ in. in the other will give the over-all width of panels—⅛ in. should be added for rivet heads where this is important. One hole $\frac{7}{16}$-in. diameter and a slotted hole $\frac{7}{16}$x2 in. is provided in each end of stair treads. Nosing bar in all cases is $\frac{3}{16}$ in. thick and not less than 1¼ in. deep to provide edge stiffness for the treads. Aluminum and other non-ferrous materials may be used.

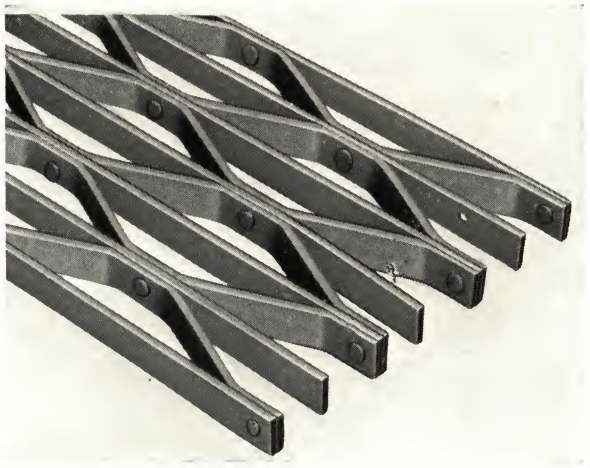


TABLE OF SAFE LOADS (UNIFORMLY DISTRIBUTED)

Maximum allowable fibre stress 16,000 lbs. per sq. in.

Symbol	Specification		Weight per sq. ft., lb.	Safe loads for various spans (lb. per sq. ft.)												
	Straight bars	Diagonal bars		1'6"	2'0"	2'6"	3'0"	3'6"	4'0"	4'6"	5'0"	5'6"	6'0"	7'0"	8'0"	9'0"
A	¾"x⅛"	½"x⅛"	5.4	695	390	250	173	127	97	77	63					
B	1"x⅛"	¾"x⅛"	7.6		695	445	308	227	173	138	112	93				
C	1"x$\frac{1}{16}$"	¾"x⅛"	9.4		1040	665	460	340	260	206	167	140	116			
D	1¼"x⅛"	¾"x⅛"	9.8			700	480	358	273	215	175	143	120			
E	1¼"x$\frac{1}{16}$"	¾"x⅛"	11.9			1100	730	535	410	325	265	215	185	135	100	80
F	1½"x⅛"	¾"x⅛"	10.9			1020	707	516	396	314	253	210	173	130	100	77
G	1½"x$\frac{3}{16}$"	¾"x⅛"	13.5			1530	1050	775	595	470	380	315	265	202	150	115
H	1¾"x$\frac{3}{16}$"	1"x⅛"	15.0			2060	1435	1050	810	635	520	425	360	265	200	160
I	2"x$\frac{3}{16}$"	1"x⅛"	16.8			2700	1875	1375	1055	830	675	560	470	345	265	210
J	2¼"x$\frac{3}{16}$"	1"x⅛"	18.3			3460	2400	17565	1350	1065	865	715	600	440	340	265

AIR-LITE GRATING—S-B

Grating S-B is designed to provide maximum opening where air, light and freedom from sharp intersections are required. Construction is extremely rigid and standard spacings and sizes of bars are such as to give maximum economy. A shallow J-shaped slot is punched out of the top of bearing bars, and cross bars are cut to permit a part of cross bar to enter to bearing bars so that the curved slot locks the whole together rigidly—the cleanest joint of this kind. Painting and maintenance is quite easy. This grating may be furnished in aluminum or other non-ferrous materials.

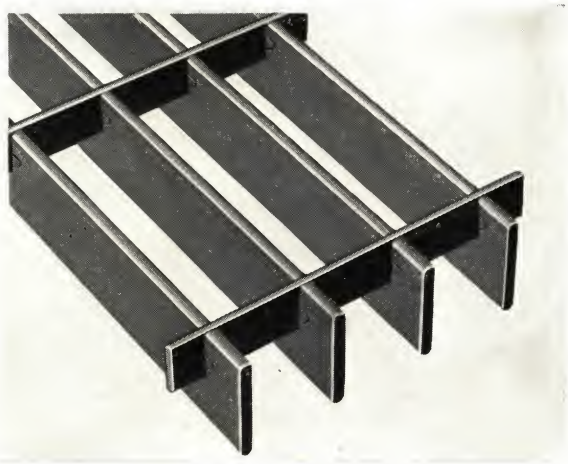


TABLE OF SAFE LOADS

For a fibre stress of 18,000 lbs. per sq. in.

Size of Bars, In.		Weight per sq. ft., lb.	2'0"	2'6"	3'0"	3'6"	4'0"	4'6"	5'0"	6'0"	7'0"	8'0"	9'0"	10'0"
Bearing	Cross													
¾x⅛	$\frac{3}{16}$x14G	3.10	428	281	194	143	109	87						
¾x$\frac{1}{16}$	¾x⅛	5.0	642	421	291	215	164	131						
1x⅛	¾x⅛	5.4	777	497	346	254	194	154	124	86				
1x$\frac{3}{16}$	¾x⅛	6.8	1167	746	518	381	292	231	186	130				
1¼x$\frac{3}{16}$	¾x⅛	8.4	1822	1168	809	596	456	360	292	203	149			
1¼x$\frac{3}{16}$	¾x⅛	9.8	2625	1680	1167	857	656	519	420	292	214	164		
1¾x$\frac{3}{16}$	¾x⅛	11.2	3580	2286	1590	1170	895	707	572	398	292	224	177	143
2x$\frac{3}{16}$	¾x⅛	11.5	4666	2987	2079	1525	1176	924	748	519	381	292	231	187
2¼x$\frac{3}{16}$	1x⅛	14.9	5910	3780	2625	1930	1478	1167	945	656	482	369	292	236

STAIR TREADS

Stair treads are produced to length specified.

Widths are 5⅜, 7⅞, 8¼, 10⅜, 10⅞, 12$\frac{3}{16}$ in.

D-B—Width is fixed by the multiples of bars required at standard spacing: 1¼ in. center to center of bars ⅛ in. thick, $1\frac{5}{16}$ in. center to center bars $\frac{3}{16}$ in. thick.

S-B—Spacing of bars $\frac{3}{16}$ in. thick is 1-in. opening by 4¾ in. center to center of cross bars.

BLAW-KNOX COMPANY

Steel Grating

2041 Farmers Bank Building, PITTSBURGH, PA.

NEW YORK, N. Y., 342 Madison Avenue
CHICAGO, ILL., Peoples Gas Building
PHILADELPHIA, PA., Broad Street Station Building
BIRMINGHAM, ALA., Brown-Marx Building

PACIFIC COAST DIVISION: Blaw-Knox & Western Pipe Corp., SAN FRANCISCO, CALIF.
EXPORT DIVISION: Blaw-Knox International Corp., PITTSBURGH, PA.
LONDON, ENGLAND, New Oxford House, Hart Street, HOLBORN, W. C. 1
PARIS, 8°, FRANCE, 11 Rue La Boëtie

Blaw-Knox Electroforged Steel Grating and Open Flooring

The advantages of actual one-piece construction presented exclusively by Blaw-Knox Electroforged Steel Grating will be especially apparent to those who have used, or are using today, ordinary grating which is mechanically assembled. It is a simple structure, electroforged for strength and permanence, marked by an entire absence of loose parts and characterized by an extremely low maintenance cost.

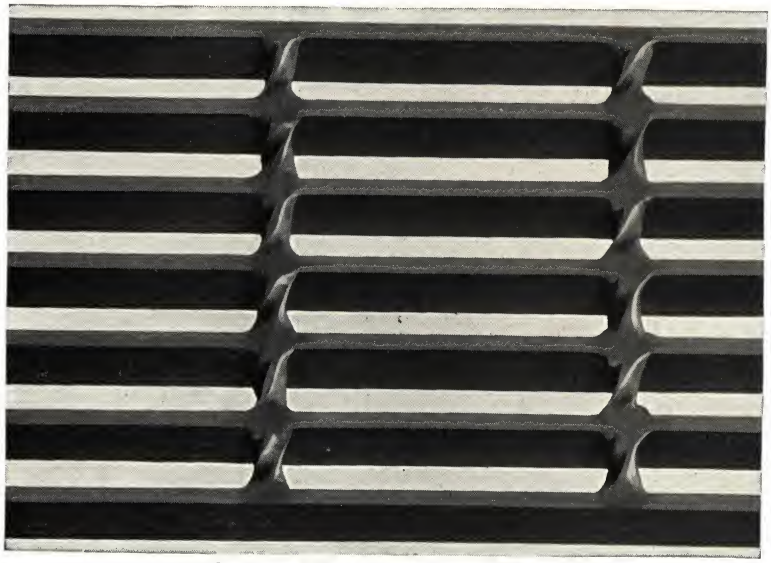
BLAW-KNOX Electroforged

Exclusive Features of Blaw-Knox Electroforged Steel Grating

Non-slip — Perfect traction is afforded by the slightly rough edges of the twisted cross bars which protrude slightly above the surface of the bearing bars.

Greatest Strength—The electroforged one-piece construction utilizes full strength of the gross amount of metal.

The resulting one-piece section has maximum loading capacity per pound.



Section of Electroforged Steel Grating
Showing rigid welding and sharp, flat topped bars

Longest Life—Because of its design and exclusive method of fabrication Electroforged Grating presents a one-piece construction free from cracks, joints, or crevices of any kind. This also enables Electroforged Grating to be 100% protected by paint or galvanizing, leaving no part exposed to corrosive action.

One-piece Grating—Blaw-Knox Electroforged Grating is manufactured by laying the twisted bars across the top of the bearing bars without slotting or cutting the metal.

Enormous pressure and resistance welding electroforges the bar into one piece where the metals cross.

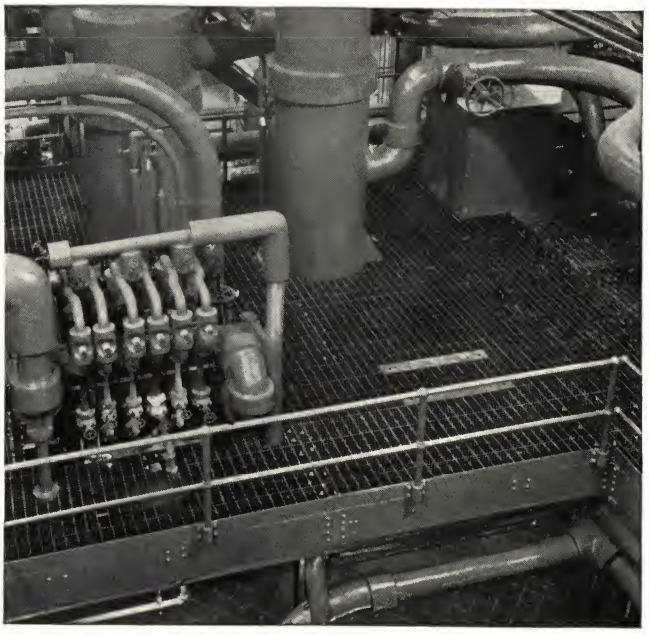
Self-cleaning — No acute angles or projections to collect debris.

Better Light and Ventilation — The construction of Blaw-Knox Electroforged Grating permits clean-cut rectangular openings.

Maximum lighting and ventilation are assured.

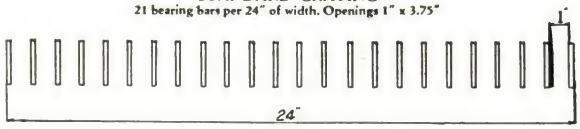
Easily Installed — Installation cost of Blaw-Knox Grating is reduced to a minimum by a very simple and secure method of fastening the grating.

Electroforged Grating in Camden (N. J.) County Park Pumping Station

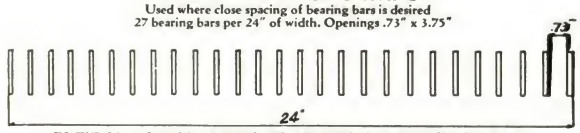


Blaw-Knox Electroforged Grating Installed in Large Power Station

STANDARD GRATING
21 bearing bars per 24" of width. Openings 1" x 3.75"



SPECIAL CLOSE MESH GRATING
Used where close spacing of bearing bars is desired
27 bearing bars per 24" of width. Openings .73" x 3.75"



TO FIND LOAD CAPACITY, WEIGHT AND DEFLECTIONS, ADD 20% TO STANDARD LOAD TABLE AND SPECIFICATIONS ABOVE

Grating Samples

The most convincing argument for the superior features of Blaw-Knox Electroforged Grating is the grating itself. An actual sample is yours for the asking.

Sizes of Electroforged Gratings

Blaw-Knox grating panels are 24 in. wide. Maximum length of panels 20 ft. Lengths of stair treads furnished to suit your requirements. Odd widths of panels, as shown in table, supplied to fill out necessary dimensions.

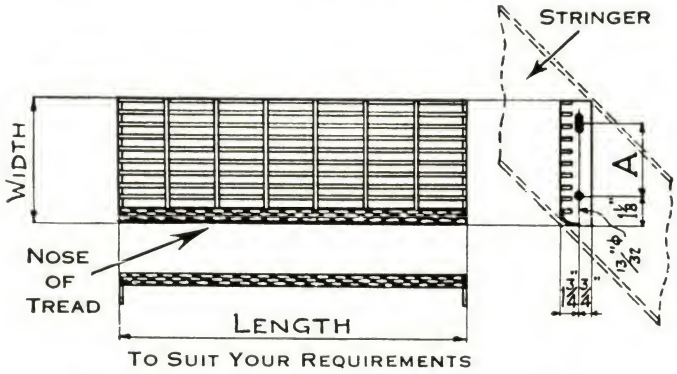
Standard cross-bar spacing 4 in. center to center. Spacings of 3, 2½, 2 and 1¾ in. can also be furnished.

Blaw-Knox Stair Treads

The new Blaw-Knox Electroforged Stair Tread is designed for tremendous strength against impact. It is now manufactured using a nosing made from rolled diamond checkered plate.

STANDARD SIZES AND SPECIFICATIONS

Type "J"—1 x 3/16 in. Bars				Type "L"—1¼ x 3/16 in. Bars			
Width, in.	Min. length, ft.–in.	Sug. max. length, ft.–in.	A, in.	Width, in.	Min. length, ft.	Sug. max. length, ft.–in.	A, in.
6 1/16	1—6	3—0	2½	7¼	2	4—0	4½
7¼	1—6	3—0	4½	8 7/16	2	4—0	4½
8 7/16	1—6	3—6	4½	9⅝	2	4—0	7
9⅝	1—6	3—6	7	10 13/16	2	4—6	7
10 13/16	1—6	3—6	7	12	2	4—6	7



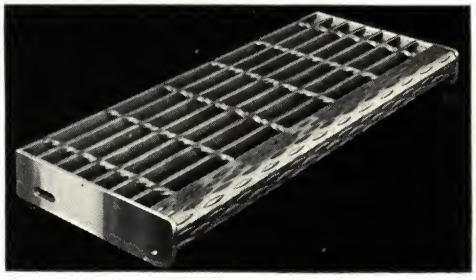


TABLE OF SAFE LOADS

C—Safe concentrated load in pounds per foot of width
U—Safe uniform load in pounds per foot of width. D—Deflection in inches.

Span, ft.-in.		2-0	2-6	3-0	3-6	4-0	4-6	5-0	5-6	6-0	6-6	7-0	8-0	9-0
Size of bearing bars 1 in. apart														
¾x⅛	U	330	222	143										
	D	.085	.134	.192										
	C	330	265	215										
	D	.068	.108	.154										
¾x3/16	U	500	320	217										
	D	.085	.134	.192										
	C	500	400	325										
	D	.068	.108	.154										
1x⅛	U	600	384	267	188	150								
	D	.064	.099	.143	.195	.256								
	C	600	480	400	330	300								
	D	.051	.080	.115	.156	.205								
1x3/16	U	900	580	400	286	225								
	D	.064	.099	.143	.195	.256								
	C	900	725	600	500	450								
	D	.051	.080	.115	.156	205								
1¼x⅛	U	950	600	420	303	232	184	146	120					
	D	.051	.081	.115	.157	.205	.259	321	.389					
	C	950	750	630	530	465	415	365	330					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1¼x3/16	U	1425	900	633	457	350	278	220	182					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
	C	1425	1125	950	800	700	625	550	500					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1½x⅛	U	1365	880	610	445	340	266	220	182	150	128	110		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
	C	1365	1100	915	785	680	600	550	500	450	415	385		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1½x3/16	U	2050	1320	917	672	512	400	330	273	225	192	164		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	522		
	C	2050	1650	1375	1175	1025	900	825	750	675	625	575		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1¾x3/16	U	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
	D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
	C	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
	D	.029	.046	.066	.090	.117	.148	.183	.221	.264	.308	.358	.468	.593
2x3/16	U	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
	D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
	C	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
	D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
2¼x3/16	U	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
	D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574
	C	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
	D	.023	.035	.051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460

Spans to right of heavy line not recommended

Maximum allowable fiber stress 16,000 lbs. per sq. in.

What to Specify When Ordering Blaw-Knox Electroforged Grating

(1) Size of bars and type—standard or special.
(2) Whether to be painted or galvanized.
(3) Complete dimensions of area to be covered.
(4) Direction bearing bars are to run.
(5) Is clearance to be allowed?

AMERICAN ABRASIVE METALS CO.

IRVINGTON, NEW JERSEY

NEW YORK OFFICE: 50 CHURCH STREET

National Distributors for

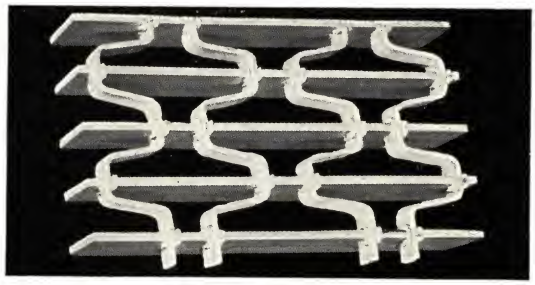
RELIANCE STEEL PRODUCTS COMPANY

RANKIN (PITTSBURGH), PA.

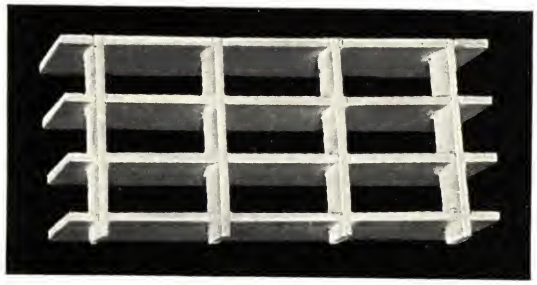
RELIANCE ELECTRO-PRESSURE WELDED GRATINGS, TREADS AND ARMORING

Grating

It is a positive *one-piece* structure. In the RELIANCE welding process, it is impossible for the joints to loosen, because after the metals have been fused under 1000 to 230,000 amperes the 250,000-lb. pressure per cross bar is continued over cold metal to insure positive welds and homogeneous structure—the deep cross bars act as cross braces and insure maximum distribution. This is important *as every piece of grating is subject to a concentrated load in one form or another.* The negative moment is properly taken care of when used as a continuous flooring over three or more supports. There are no acute angles at the joints. This insures maximum ventilation and eliminates the accumulation of dirt in the corners. The sales of gratings and treads during 1937 approached 1,000,000 sq. ft.



Diagonal—"D" Type



Rectangular—"R" Type

Reliance Armoring

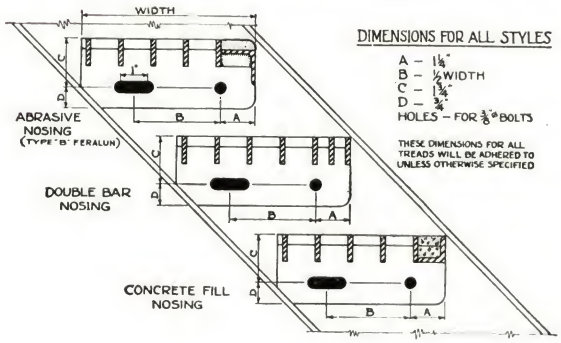
An entirely new design which offers a strong and economical method for floor protection. Send us your problems. Our Engineering Department will cheerfully make definite recommendation.

Reliance Stair Treads

The same superior features of Reliance Electro-Pressure Welded Gratings are available in Reliance Stair Treads. The scientific spacing of cross bars and the fusion formed by the electro-welding process act as non-skid safeguards.

Visible Anti-slip Nosing—The Reliance Stair Tread is the only grating tread manufactured with Alumalun or Feralun abrasive anti-slip nosing—a real anti-slip design in which the edge of each step stands out most clearly. Other designs in Reliance Stair Treads are also available.

Reliance Abrasive Nosing Tread



SAFE-LOAD AND DEFLECTION TABLE FOR GRATING

(Rectangular Design)

For maximum fiber stress of 16,000 lbs. per sq. in.

Size of bearing bar (1" apart), in.		2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0
¾ x 3/16	P	530	320	217										
	D	.085	.134	.192										
	W	500	400	325										
	D	.068	.108	.154										
1 x 3/16	P	900	725	600	500	450								
	D	.051	.080	.115	.156	.205								
	W	900	580	400	286	225								
	D	.064	.099	.143	.195	.256								
1¼ x 3/16	P	1425	1125	950	800	700	625	550	500					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
	W	1425	900	633	457	350	278	220	182					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
1½ x 3/16	P	2050	1650	1375	1175	1025	900	825	750	675	625	575		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
	W	2050	1320	917	672	512	400	330	273	225	192	164		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
1¾ x 3/16	P	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
	D	.029	.046	.066	.090	.117	.148	.183	.221	.268	.308	.358	.468	.593
	W	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
	D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
2 x 3/16	P	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
	D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
	W	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
	D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
2¼ x 3/16	P	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
	D	.023	.035	.051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460
	W	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
	D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574

P = Safe concentrated load in pounds per foot of width.
W = Safe uniform load in pounds per square foot.
D = Deflection in inches.

For ⅛" bearing bar, carrying capacity is two-thirds and deflection four-thirds that of 3/16".

For ¼" bearing bar, carrying capacity is four-thirds and deflection three-quarters that of 3/16".

We *guarantee* that for the same metal and the same size bars, Reliance Grating will have at least as much carrying capacity and no more deflection than any other grating on the market.

The above tables are *extremely conservative* when applied to Reliance Electro-Pressure Welded Grating.

For other gratings or spacings, our Engineers will promptly supply safe load tables, upon request.

Maximum lengths 40 ft. Maximum width 6 ft. Standard widths 3 ft. Reliance Engineers will recommend specific widths for specific jobs.

HENDRICK MANUFACTURING COMPANY

Mitco Open Steel Flooring, Mitco Armorgrids, Mitco Shur-Site Treads

57 Dundaff Street, CARBONDALE, PA.

SALES OFFICES IN PRINCIPAL CITIES—CONSULT TELEPHONE DIRECTORY

Products

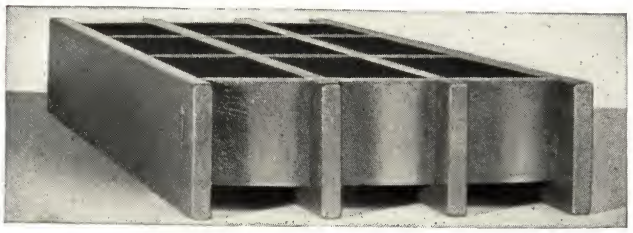
MITCO OPEN STEEL FLOORING, MITCO ARMORGRIDS and MITCO SHUR-SITE TREADS.

For our Perforated Grilles, see File Index.

Also Perforated Metals, Perforated Metal Screens, Elevator Buckets, Testing Screens, Sheet Metal Work, Stacks, Tanks, Breechings and other light and heavy steel plate construction in all methods and all metals.

MITCO Reg. U. S. Pat. Off.

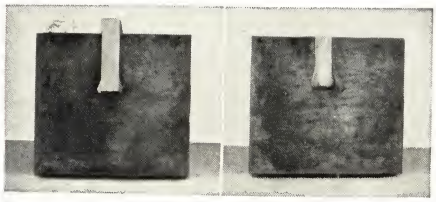
Mitco Open Steel Flooring



Panel of Mitco Open Steel Flooring

Note the depth of the cross bars. In addition to serving as struts, these cross bars provide transverse strength and prevent any lateral deflection.

With its 90% open area, Mitco Open Steel Flooring provides maximum light and ventilation without sacrifice of strength or safety. Mitco is not welded, hence it is free from residual stresses which may cause warping or possible failure of connections in service. Mitco is pressure formed. This construction eliminates mechanical locking devices, bolts, rivets and other sources of possible weakness.



Section Showing Cross Bar in Dovetail, Before Pressing Operation — **Section Showing Cross Bar and Bearing Bar After Pressing**

In the making of Mitco, the bearing bars are prepared with a dovetail slot to receive the cross or transverse bars. Under hundreds of tons hydraulic pressure, the transverse bars are pressed into the bearing bars so that the metal in the transverse bars completely fills the dovetails in the bearing bars. As the dovetails in the bearing bars are always above the neutral axis and are completely filled by the transverse bars, the strength of the full section is developed. The transverse bars, extending below the neutral axis not only serve as struts but also provide transverse strength, firmly locking the panel of Mitco into an integral unit, distributing concentrated loads over the entire panel and preventing any lateral deflection.

Free from bolts, rivets, acute angles or other obstructions, Mitco is practically self-cleaning and provides maximum light and ventilation from floor to floor.

Mitco Armorgrids

Mitco Armorgrids materially prolong the life of concrete, cement, asphalt, mastic or other composition floors. Laid in the floor, with the tops of the panels flush with the floor surface, Mitco Armorgrids absorb the brunt of shocks, grinding loads and continuous wear. They prevent cracking and potholing, thereby reducing floor maintenance. Mitco Armorgrids, furnished in large or small units, are easily and economically installed. They are furnished completely fabricated, and require no assembly in the field.

Main trucking aisle, in the plant of a well-known manufacturer, armored with Mitco Armorgrids

68J

Mitco Shur-Site Treads

Mitco Shur-Site Treads, for stairs, ladders and fire escapes, are integral units made of Mitco Open Steel Flooring, with the rectangular openings, non-slipping and non-clogging surface and other Mitco advantages. They are furnished in widths and lengths to meet all requirements, ready to bolt directly to stair stringers. No shelf angles are required.

SAFE LOADS IN POUNDS BASED ON FIBRE STRESS OF 16,000 POUNDS PER SQUARE INCH

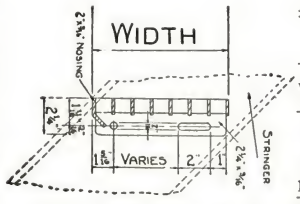
U—Safe Uniform Load in Pounds per Square Foot D—Deflection in Inches
C—Safe Concentrated Load in Pounds per Foot of Width

Size of bearing bars, in.	Size of cross bars, in.		2′0″	2′6″	3′0″	3′6″	4′0″	4′6″	5′0″	5′6″	6′0″	6′6″	7′0″	8′0″	9′0″
¾x⅛	⅝x⅛	U	330	222	143										
		D	.085	.134	.192										
		C	330	265	215										
		D	.068	.108	.154										
¾x3/16	⅝x⅛	U	500	320	217										
		D	.085	.134	.192										
		C	500	400	325										
		D	.068	.108	.154										
1 x⅛	⅞x⅛	U	600	384	267	188	150								
		D	.064	.099	.143	.195	.256								
		C	600	480	400	330	300								
		D	.051	.080	.115	.156	.205								
1 x¾	⅞x⅛	U	900	580	400	286	225								
		D	.064	.099	.143	.195	.256								
		C	900	725	600	500	450								
		D	.051	.080	.115	.156	.205								
1¼x⅛	⅞x⅛	U	950	600	420	303	232	184	146	120					
		D	.051	.081	.115	.157	.205	.259	.321	.389					
		C	950	750	630	530	465	415	365	330					
		D	.041	.064	.092	.125	.163	.207	.256	.310					
1¼x3/16	⅞x⅛	U	1425	900	633	457	350	278	220	182					
		D	.051	.081	.115	.157	.205	.259	.321	.389					
		C	1425	1125	950	800	700	625	550	500					
		D	.041	.064	.092	.125	.163	.207	.256	.310					
1⅜x⅛	1 x⅛	U	1365	880	610	445	340	266	220	182	150	128	110		
		D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
		C	1365	1100	915	785	680	600	550	500	450	415	385		
		D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1⅜x3/16	1 x⅛	U	2050	1320	917	672	512	400	330	273	225	192	164		
		D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
		C	2050	1650	1375	1175	1025	900	825	750	675	625	575		
		D	.034	.053	.077	.104	.137	.173	.214	.259	.306	.361	.418		
1¾x3/16	1 x⅛	U	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
		D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
		C	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
		D	.029	.046	.066	.090	.117	.148	.183	.221	.264	.308	.358	.468	.593
2 x3/16	1¼x⅛	U	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
		D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
		C	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
		D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
2¼x3/16	1¼x⅛	U	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
		D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574
		C	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
		D	.023	.035	051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460

SPANS TO RIGHT OF HEAVY LINE NOT RECOMMENDED

Standard Type "C" has bearing bars spaced on $1\frac{3}{16}$-in. centers and cross bars spaced on $4\frac{3}{4}$-in. centers, or 4-in. centers if preferred. This applies for grating with either $\frac{3}{16}$-in. thick or ⅛-in. thick bearing bars. Closer or wider spacing of bearing bars and/or cross bars can be furnished to meet special requirements.

MITCO SHUR-SITE TREADS



Type "C"—1″x3/16″-Bars				Type "C"—1¼″x3/16″-Bars			
Width	Min. lgth.	Max. lgth.	A	Width	Min. lgth.	Max. lgth.	A
6 1/16″	1′6″	3′0″	2½″	7¼″	2′0″	4′0″	4½″
7¼″	1′6″	3′0″	4½″	8 7/16″	2′0″	4′0″	4½″
8 7/16″	1′6″	3′6″	4½″	9⅝″	2′0″	4′0″	7″
9⅝″	1′6″	3′6″	7″	10 13/16″	2′0″	4′6″	7″
10 13/16″	1′6″	3′6″	7″	12″	2′0″	4′6″	7″

Note: The tables give standard widths and suggested minimum and maximum lengths. Other widths and any lengths can be furnished to meet requirements; also other thicknesses and depths of main bars.

IRVING SUBWAY GRATING CO., INC.

IRVING IRON WORKS COMPANY (SUBSIDIARY)

(ESTABLISHED IN 1902)

50-09 27th Street, LONG ISLAND CITY, N. Y.

BRITISH LICENSEES: Estler-Irving Ltd., SLOUGH, BUCKS., ENGLAND
CANADIAN LICENSEES: Canada Ingot Iron Company, Ltd., GUELPH, ONTARIO, CANADA
OFFICES IN PRINCIPAL CITIES—CONSULT LOCAL TELEPHONE BOOK FOR ADDRESS

Makers of

IRVING SUBWAY GRATING PRODUCTS

Continuity or Paneled

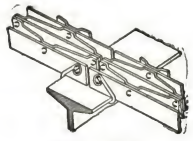
Grating—Floor Armoring—Stair Treads—Bridge Decking—Steel Pavement

Irving "Subway Continuity" Grating is an ideal industrial floor—slip-proof, stumble-proof and free from all underfoot hazards. It provides a perfect traffic and traction surface, *without a joint or joint lines,* because of the unique method of splicing the units. There are no separate panels to loosen, wobble or up-end, and no butt-joints for wheel loads to pound.

The illustration below clearly shows the clean-cut, neat appearance of an Irving floor—no joints or joint lines—*it is a one-piece job from side-to-side and continuous in all directions.* Irving "Subway" Grating can be furnished in panels if desired.

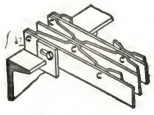
TRADE MARKS
(Reg. U. S. Pat. Off.)

SUBWAY
IRVICO
ARMORING
RETICULINE
UNIFIED
STREAMLINE
CONTINUITY
VIZABLEDG
SAFTRED
SAFSTEP
SAFKAR
SUNWAY
SUBLIT



Type C-1

¼-in. *round hooks,* furnished as standard equipment unless otherwise specified; sometimes furnished straight, of varying length, to be bent on the job



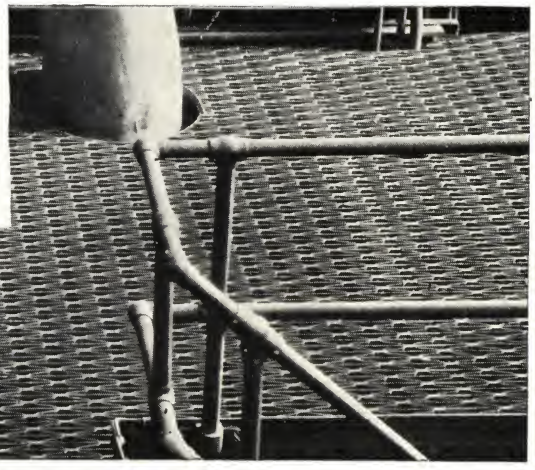
Type C-2

Adjustable clip, furnished for use with angle or channel iron support; can be used only with Types "M," "Q," "V" and requires full data on location of supports

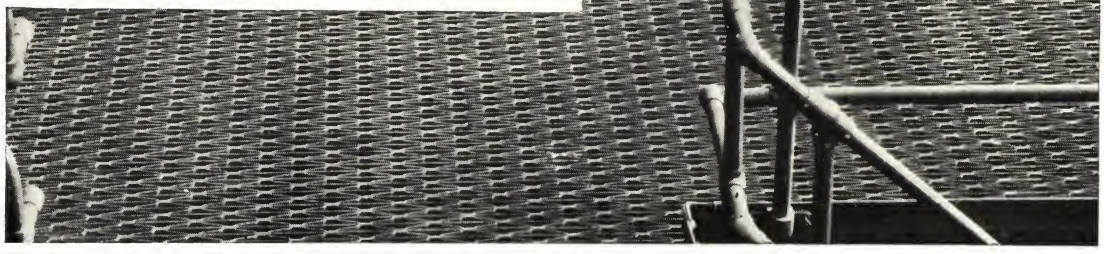
Fastening Devices Most Commonly Used

IRVING SUBWAY GRATING

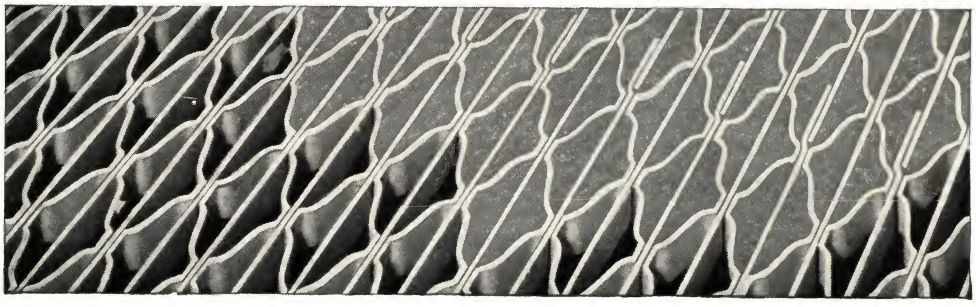
Continuous in All Directions
Maximum Foot Contact
No Joints Anywhere
Maximum Wheel Contact



Trussed for Strength
●
Riveted for Security



IRVING "CONTINUITY" INDUSTRIAL FLOOR ARMORING



Irving "Continuity" Floor Armoring is a one-piece steel mat, upon which the loads roll smoothly in all directions.

There are no butt-joints for wheel loads to pound. The steel takes the wear. The fill acts only to prevent corrosion of the steel. It provides 100% protection against traffic, shock, cracks and breaks. It assures permanent satisfaction and economy.

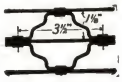
IRVING SUBWAY GRATING

Table of *Safe Loads* for Types "M", "O", "AA", and "BB" only; for Types "Q", "R", "CC" and "DD", increase 40%; for Type "V" decrease 50%. Maximum fibre stress, 16,000 lb.

Symbol and depth	Straight bars in.		U = Uniform Load, lbs. per sq. ft. C = Concentrated Loads, lbs. per ft. of width. D = Deflection in inches												
			2′-0″	2′-6″	3′-0″	3′-6″	4′-0″	4′-6″	5′-0″	5′-6″	6′-0″	6′-6″	7′-0″	8′-0″	9′-0″
1S ¾″	¾ x 1/8	U	330	222	143										
		D	.085	.134	.192										
		C	330	265	215										
		D	.068	.108	.154										
1SA ¾″	¾ x 3/16	U	500	320	217										
		D	.085	.134	.192										
		C	500	400	325										
		D	.068	.108	.154										
2S 1″	1 x 1/8	U	600	384	267	188	150								
		D	.064	.099	.143	.195	.256								
		C	600	480	400	330	300								
		D	.051	.080	.115	.156	.205								
2SA 1″	1 x 3/16	U	900	580	400	286	225								
		D	.064	.099	.143	.195	.256								
		C	900	725	600	500	450								
		D	.051	.080	.115	.156	.205								
3SA 1¼″	1¼ x 1/8	U	950	600	420	303	232	184	146	120					
		D	.051	.081	.115	.157	.205	.259	.321	.389					
		C	950	750	630	530	465	415	365	330					
		D	.041	.064	.092	.125	.163	.207	.256	.310					
3S 1¼″	1¼ x 3/16	U	1425	900	633	457	350	278	220	182					
		D	.051	.081	.115	.157	.205	.259	.321	.389					
		C	1425	1125	950	800	700	625	550	500					
		D	.041	.064	.092	.125	.163	.207	.256	.310					
4SA 1½″	1½ x 1/8	U	1365	880	610	445	340	266	220	182	150	128	110		
		D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
		C	1365	1100	915	785	680	600	550	500	450	415	385		
		D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
4S 1½″	1½ x 3/16	U	2050	1320	917	672	512	400	330	273	225	192	164		
		D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
		C	2050	1650	1375	1175	1025	900	825	750	675	625	575		
		D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
5S 1¾″	1¾ x 3/16	U	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
		D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
		C	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
		D	.029	.046	.066	.090	.117	.148	.183	.221	.264	.308	.358	.468	.593
6S 2″	2 x 3/16	U	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
		D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
		C	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
		D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
7S 2¼″	2¼ x 3/16	U	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
		D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574
		C	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
		D	.023	.035	.051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460

SPANS TO RIGHT OF HEAVY LINE NOT RECOMMENDED

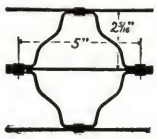
Type "M"
7 in. c. to c. rivets
1⅛ in. between bars



Type "O"
3½ in. c. to c. rivets
1⅛ in. between bars

Type "Q"
7 in. c. to c. rivets
¾ in. between bars

Type "R"
3½ in. c. to c. rivets
¾ in. between bars



Type "V"
5 in. c. to c. rivets
2 5/16 in. between bars

Heavy Loads—Occasionally there are open flooring requirements calling for very heavy loading, especially heavy wheel concentrations. These, of course, call for heavy "special" gratings. We are prepared to design and fabricate an Irving "Subway" grating that will meet your requirements.

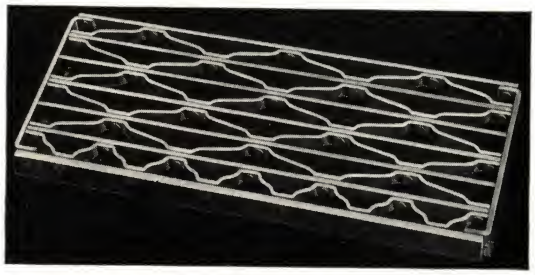
IRVING "VIZABLEDG SAFSTEPS"

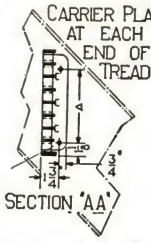
Miss-proof, Slip-proof, Easily Installed

These safety steps guard against slipping and overstepping the edge. "M" mesh is used throughout, except next to nosing bar, where "O" mesh or crimp provides an edge that stands out boldly from the step proper. Each Safstep is a *self-contained unit* with carrier plates attached.

STANDARD "VIZABLEDG" STOCK SIZES

Stock No.	Width in.	Length ft.	Length in.	Distance "A," in.	Wt., lb.	See specifications at left	Stock No.	Width in.	Length ft.	Length in.	Distance "A," in.	Wt., lb.	See specifications at left
1	5¼	1	7	2½	6.0	A	13	8⅛	4	6	4½	37.4	C
2	5¼	1	10½	2½	7.0	A	14	10¼	1	7	7	10.4	A
3	5¼	2	2	2½	7.7	A	15	10¼	1	10½	7	11.9	A
4	5¼	2	5½	2½	11.3	B	16	10¼	2	2	7	13.8	A
5	5¼	3	0½	2½	14.0	B	17	10¼	2	5½	7	20.0	B
6	7¾	1	7	4½	8.2	A	18	10¼	3	0½	7	24.0	B
7	7¾	1	10½	4½	9.4	A	19	10¾	3	7½	7	39.0	C
8	7¾	2	2	4½	10.4	A	20	10¾	3	11	7	42.1	C
9	7¾	2	5½	4½	16.1	B	21	10¾	4	6	7	48.7	C
10	7¾	3	0½	4½	18.8	B	22	12 1/16	3	7½	7	44.4	C
11	8⅛	3	7½	4½	30.3	C	23	12 1/16	3	11	7	47.6	C
12	8⅛	3	11	4½	32.9	C	24	12 1/16	4	6	7	54.2	C





"Vizabledg Safstep" with "O" Type Crimp Nosing

Furnished with perforated metal nosing as shown on "X-Bar" Tread below if desired.

	A	B	C
Straight bars, in.	¾ × 1/8	1 × 1/8	1¼ × 3/16
Reticuline bars, in.	½ × 1/8	¾ × 1/8	¾ × 1/8
Nosing bars, in.	1 × ¼	1¼ × ¼	1½ × ¼
Carrier bars, in.	2½ × 5/16	2½ × 5/16	2½ × 5/16

IRVING "X-BAR" GRATING AND TREADS

"X-Bar" Grating

A rectangular mesh grating whose cross bars are expanded into tapered slots in carrying bars. These slots do not extend below the neutral axis, but cross bars extend below these slots, thereby bracing the carrying bars against "shuttering" or overturning.

Type	Bearing Bars	Cross Bars
AA	1 3/16 in. on centers	4 in. on centers
BB	1 5/16 in. on centers	2 in. on centers
CC	15/16 in. on centers	4 in. on centers
DD	15/16 in. on centers	2 in. on centers

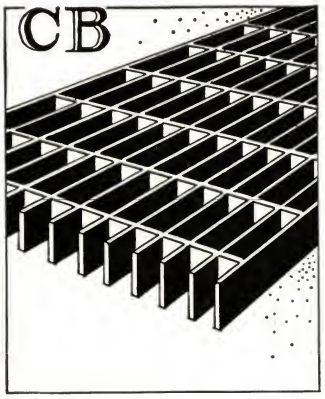
Irving "Vizabledg X-Bar" Tread

Made with a raised perforated nosing for a non-slip edge which stands out clearly. Can be furnished with either plate or angle carriers. Made in all sizes

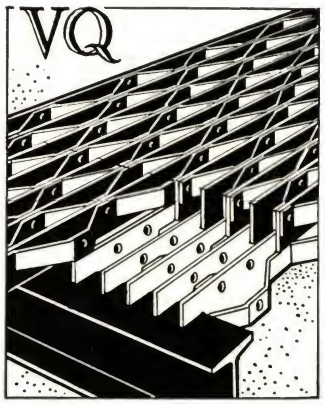
KERLOW STEEL FLOORING COMPANY

Grating Flooring, Bridge Paving, Safety Steps, and Allied Products

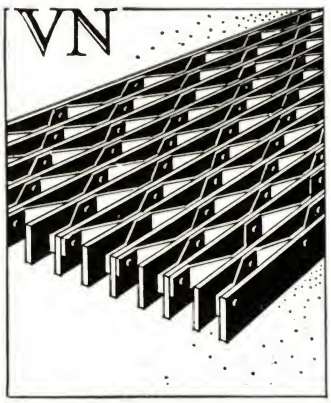
222-238 Culver Avenue, JERSEY CITY, N. J.



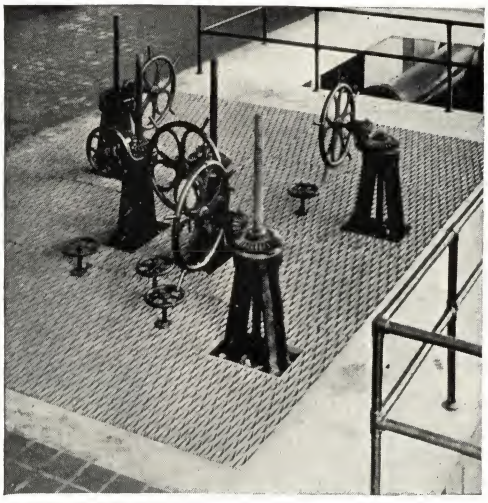
Series "CB" —Grating flooring—the standard (cross bar on edge) rectangular mesh grating. Cross bars are spaced 4 in. on center. This grating has a clear opening of 1 in.



Series "VQ" —A steel floor, slightly more open than Series "CB" and "VN," installed as Steelej floors embedded flush top with mastic or concrete floors, prolongs life under traffic and prevents cracks or ruts; installed unfilled over sunken roads or on bridges provides a heavy duty roadway. An all-over pattern assured by reason of patented non-visible splices.



Series "VN" —Grating flooring—the standard (riveted) reticulated mesh grating. Rivets are spaced 6¾ in. on centers. This grating has a clear opening of 1 in.



Kerlow Grating Platform

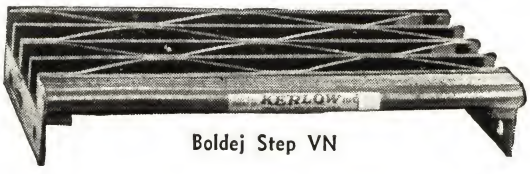
When Ordering Kerlow Gratings specify as follows:
(1) Type of grating desired.
(2) Whether painted or galvanized. Unless specified, all material will be furnished with one coat of standard black.
(3) Direction of straight bars (span).
(4) Is clearance to be allowed?
(5) Complete dimensions to be covered, unless drawings are submitted.

Kerlow Floor Grid

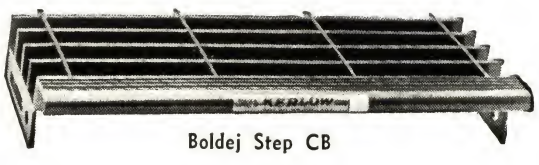
A composition floor necessity—embedded flush top in mastic or concrete floors of all kinds that are subjected to heavy industrial and vehicular traffic. Kerlow Steelej grids protect and relieve floors and roads from shocks and disintegration. Manufactured in both diamond and rectangular surface patterns. Set up above the rough floor at the proper level—the finishing material poured into and flush with the grating.

Kerlow Boldej Safety Steps

For safety—in which are incorporated all the advantages of the ordinary grating step plus the improved patented slotted carriers that fit the stringer holes even if incorrectly spaced—thus avoiding the drifting or reaming of stair stringer holes on the job. The Boldej safety nosing provides extra strength at the point of greatest impact and gives a feeling of security under foot which is absent in most grating steps.



Boldej Step VN



Boldej Step CB

SAFE LOAD TABLE COVERING KERLOW GRATING TYPES CB AND VN

For Type VQ decrease 45%. For CB decrease 7%. Maximum fibre stress 16,000 lbs.

C—Safe concentrated load in pounds per foot of width.
U—Safe uniform load in pounds per foot of width. D—Deflection in inches.

Bearing bars sizes		2′-0″	2′-6″	3′-0″	3′-6″	4′-0″	1′-6″	5′-0″	5′-6″	6′-0″	6′-6″	7′-0″	8′-0″	9′-0″
¾″x⅛″	U	330	222	143										
	D	.085	.134	.192										
	C	330	265	215										
	D	.068	.108	.154										
¾″x3⁄16″	U	500	320	217				Spans to right of heavy line not recommended						
	D	.085	.134	.192										
	C	500	400	325										
	D	.068	.108	.154										
1″x⅛″	U	600	384	267	188	150								
	D	.064	.099	.143	.195	.256								
	C	600	480	400	330	300								
	D	.051	.080	.115	.156	.205								
1″x3⁄16″	U	900	580	400	286	225								
	D	.064	.099	.143	.195	.256								
	C	900	725	600	500	450								
	D	.051	.080	.115	.156	.205								
1¼″x⅛″	U	950	600	420	303	232	184	146	120					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
	C	950	750	630	530	465	415	365	330					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1¼″x3⁄16″	U	1425	900	633	457	350	278	220	182					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
	C	1425	1125	950	800	700	625	550	500					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1½″x⅛″	U	1365	880	610	445	340	266	220	182	150	128	110		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
	C	1365	1100	915	785	680	600	550	500	450	415	385		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1½″x3⁄16″	U	2050	1320	917	672	512	400	330	273	225	192	164		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
	C	2050	1650	1375	1175	1025	900	825	750	675	625	575		
	D	.034	.053	.077	.104	137	.173	.214	.259	.308	.361	.418		
1¾″x3⁄16″	U	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
	D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
	C	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
	D	.029	.046	.066	.090	.117	.148	.183	.221	.264	.308	.358	.468	.593
2″x3⁄16″	U	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
	D	.032	.050	.072	.099	.128	.163	201	.243	289	.341	.397	.516	.651
	C	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
	D	.026	040	.057	.078	.102	.129	.160	.193	230	.269	.314	409	.518
2¼″x3⁄16″	U	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
	D	.027	.044	.064	.087	.113	.148	.177	.214	.255	305	.349	.455	.574
	C	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
	D	.023	035	.051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460

Maximum allowable fiber stress 16,000 lbs. per sq. in.

ACME STEEL COMPANY

Manufacturers of Acme Floorsteel for Industrial Floors

2842 Archer Avenue, CHICAGO, ILL.

BRANCHES

NEW YORK, N. Y., 103 Park Avenue
ATLANTA, GA., 603 Stewart Avenue, S. W.
BALTIMORE, MD., 455 Guilford Avenue
MONTREAL, QUE., 365 St. Paul Street, W.
WINNIPEG, MAN., National Cartage Warehouse
TORONTO, ONT., 32 Front Street, W.
LOS ANGELES, CAL., 1934 E. 15th Street
SAN FRANCISCO, CAL., 432 Bryant Street
SEATTLE, WASH., 114 Railroad Avenue, So

ACME HEAVY DUTY FLOORSTEEL

U. S. Patents No. 1,432,171, Oct. 17, 1922; No. 1,943,328, Jan. 16, 1934; No. 1,952,721, March 27, 1934; No. 1,981,489, Nov. 20, 1934

Canadian Patents No. 303,151, Aug. 19, 1930; No. 303,152, Aug. 19, 1930

FOR LONG LIFE INDUSTRIAL FLOORS

A permanently smooth, quiet, non-skid surface. Cracks and holes cannot develop

Acme Heavy-Duty Floorsteel

Acme Floorsteel provides long-life floors at low cost.

(1) The flexible grid is easy to lay.
(2) The surface is quiet and non-skid.
(3) Exposed steel edges bear the load.
(4) Cracks, holes, and ruts cannot develop.
(5) Floor is permanently smooth and even.
(6) Maintenance costs are practically eliminated.

Floor Structure—Acme Floorsteel is embedded flush with the top in concrete and asphalt floors, and literally provides a network of steel rails for truck wheels. Two or more of these rails are at all times supporting each wheel.

The small mesh in combination with the light section of rolled steel members makes a permanently smooth and quiet floor. Under the heaviest trucking the exposed edges of the steel ribs become slightly mushroomed, presenting an increased area of steel in the surface. This protects the material next to the rib and prevents shattering.

Delivered on the job in easily handled rolls

Small mesh and light section of steel—an outstanding advantage of Acme Floorsteel

Sizes—Depths ⅝ and ¾ in.

Mesh 1¼x1¼ in.; made of strip steel .065 in. thick.

Stock sizes 47½ and 60 in. wide, 25 ft. long in ⅝-in. depth.

Special widths in ⅝ in. and ¾ in. made to order in multiples of 2½ in., up to 72½ in. Lengths as desired.

The flexible grid is easy to lay. Large sections are joined into one continuous mat

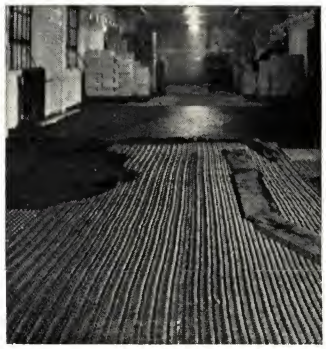
For New or Old Floors—Acme Floorsteel is practical for armoring of new or old floors and truckways. It is used in combination with concrete or asphalt mastics to resurface concrete floors, and under certain conditions it can be used to resurface wood floors when filled with a mastic.

Laying New Floors—Acme Floorsteel is rolled out on the base course or sub-floor in large sections which are joined by pins and wires into one continuous mat. Filling material is then placed and troweled.

Repairing Old Floors—Repairing an old floor is a simple matter with Acme Floorsteel. When used over old concrete or brick, the floor should be previously prepared by filling holes, or uneven worn spots and cracks with a suitable grout. An asphalt bond coat is applied, and the Acme Floorsteel laid in the usual manner with mastic used for the filling material.

When used over wood the laying of Acme Floorsteel should be done with the operations above described. In addition, the Floorsteel must be fastened to the base by means of Acme Floorsteel Anchors provided for this purpose.

Fitting—Fitting Acme Floorsteel around an obstruction is easily and quickly done by cutting the steel on one side and pulling two wires.



Any old industrial floor quickly resurfaced with Acme Floorsteel

Special snips are loaned when trimming is necessary

FOUNDED 1849

SNEAD & COMPANY

Gray Iron Self-anchoring Armor Grids for Concrete and Asphalt Floors

(PATENTED)

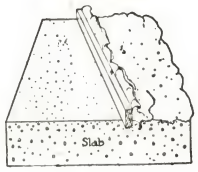
TELEPHONE
DElaware 3-3500

92 Pine Street, JERSEY CITY, N. J.

For Snead Library Equipment and Partitions, see File Index

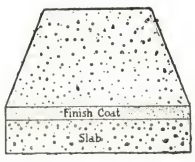
Snead Armor Grids Are Cast of Tough Duram Iron Which Has Superior Moisture and Corrosion-Resistant Properties

How to Install in Concrete



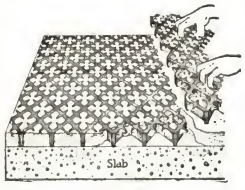
First

Screed off slab to true level surface, exact depth of grid below finished floor level



Second

When slab or leveling coat has partially set, flow on surface coat of rich 1:2 mix made with fine sharp sand



Third

Press grids into surface coat matching pattern and allowing ⅛-in. clearance between grids. Bottom grids firmly on slab

Fourth

Screed off excess grout, float in thoroughly to fill all voids and trowel smooth. Finished grout should be flush with, or about $\frac{1}{16}$ in. higher than, top surface of grid

Note: Any grid can be shaped for odd-dimensioned areas, drains, etc., with a hack saw, cold chisel and hammer.

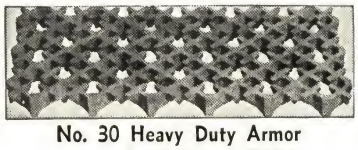
ARMOR GRIDS ELIMINATE FLOOR REPAIRS

Under grinding truck wheels, banging boxes and trunks, rolling barrels and milk cans, the dropping of heavy castings and severe traffic conditions of every sort, the best floor surfaces are in need of constant repairs, which are expensive and necessitate costly delays to production.

Snead Armor Grids eliminate the floor repair problem. Set in cement or asphalt, they armor the floor, carry the load and receive the shocks. They have been in wide use over 20 years, and during this time no installation of Snead Grids ever had to be renewed, even under the hardest service.

Snead Armor Grids do not break, work loose or wear slippery. They bond perfectly with the floor mass, hold it down and keep it intact. They distribute heat strains and keep asphalt from flowing. They prevent spalling and dusting of concrete. Pedestals are provided on the under side of each grid to expedite setting and to raise the ribs off the slab, thus permitting the finish grout to flow under the ribs and interconnect all pockets. They present a smooth running surface and they wear indefinitely.

No. 10 Lightweight Armor

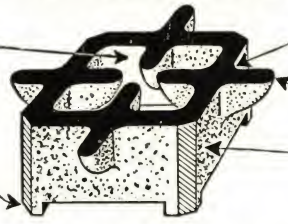


No. 30 Heavy Duty Armor

5 SUPERIOR FEATURES

Small symmetrical openings permit rolling any sliding traffic in all directions, without wearing out floor material

Pedestals provide automatic means of leveling, and allow floor material to flow under and interconnect all pockets



All corners rounded. No acute angles. No thin fins to break

Projecting ribs hold down floor material and prevent spreading

Roughened and tapered side walls bond perfectly with floor material without special anchoring devices

SNEAD ARMOR GRIDS MEET THE FOLLOWING INDUSTRIAL REQUIREMENTS

1—Permanent—Non-dusting—Quiet
2—Offer Minimum Resistance to Traffic
3—Afford Good Traction Under All Conditions
4—Protect Concrete or Mastic
5—Withstand Shocks
6—Impervious to Acid, Moisture, Temperature Changes
7—Good Appearance and Easy to Clean
8—Inexpensive to Install and Maintain

SPECIFICATIONS FOR INSTALLING

Installing Over Concrete Base

Base shall be brought to a true and even surface exactly the depth of the grid below the finished floor level. When the slab has set enough to hold the weight of the grids flow on a surface coat of rich 1:2 mix using clean, sharp sand; press the grids into the mix until they rest firmly on the slab. (Specify whether grids shall be laid in straight rows or staggered or laid herringbone). Grids shall be pressed into the surface coat until the mix squeezes through the openings at the top; excess grout shall be screeded off and given a trowel finish, leaving the concrete flush or about $\frac{1}{16}$ in. higher than the iron.

Installing In Asphalt Over Concrete

Prepare base slab as described above. Then apply a hot mix of asphalt mastic not less than 350° F. with no particles of aggregate over ¼ in. in diameter. Grids shall be pressed into the asphalt mastic until they rest firmly on the slab. Asphalt shall be brought $\frac{1}{16}$ or ⅛ in. over grids and a second rubbing shall be given after filling with clean, sharp sand.

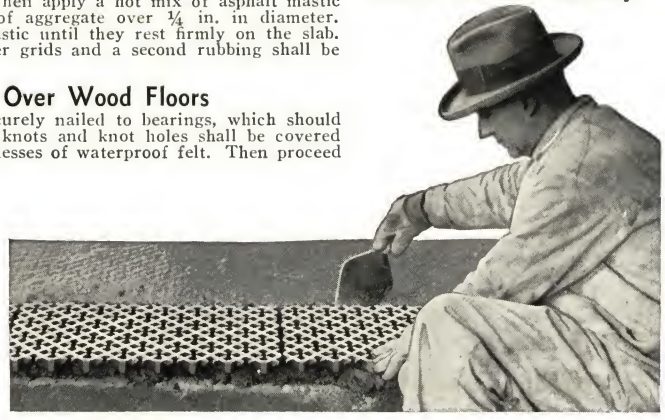
Installing In Asphalt Over Wood Floors

Floor boards shall be laid close and securely nailed to bearings, which should not be over 16 in. on centers. All loose knots and knot holes shall be covered with sheet metal. Over this lay two thicknesses of waterproof felt. Then proceed as described in preceding paragraph.

Right:
3350 sq. ft. No. 20 Snead Armor Grid—Chas. R. Hedden Co., Newark, N. J., Contractor—installed in March 1929 for Merchants Refrigerating Co., Jersey City, N. J.

After testing many floor materials, No. 20 Snead Grids were selected as most economical per foot, per year, by the owner of this railroad platform, one of the largest refrigerating companies in the country.

All of this company's plants now have Snead Grid protection



A FEW USERS

Automobile Manufacturers
General Motors Corp.

Chemical Industries
Colgate & Co.
The Viscose Co.

Dairies and Cold Storage Plants
Borden's Farm Products Co.
Dairymen's League Coop. Assn.
Eastern Cold Storage Co.
Furnas-Velvet Ice Cream Co.
Merchants Refrigerating Co.
National Dairy Co.
Sheffield Farms Co.

Food Products
Armour & Co.
Corn Products Refining Co.
General Baking Co.
Hershey Chocolate Corp.
Geo. A. Hormel & Co.
Premier-Pabst Brewing Co.
Runkel Bros.
Schaeffer Brewing Co.
Schlitz Brewing Co.
Standard Brands, Inc.

Hardware and Metal Products
Brown & Sharpe Mfg. Co.
General Electric Co.
Providence Base Works, G. E.
Scoville Mfg. Co.
U. S. Government Mint
Yale & Towne

Paper, Printing, Publishing
Detroit Sulphite & Paper Co.
New York World-Telegram
Scott Paper Co.
West Virginia Pulp & Paper Co.

Railroads, Public Service, etc.
New York Central R. R.
Pennsylvania Hotel
Pennsylvania R. R.
U. S. Govt. Post Office, N. Y.
Port of New York Authority

DIMENSIONS, WEIGHTS AND DISPLACEMENT

Grid No.	Length, in.	Width, in.	Rib depth, in.	Ovar-all depth, in.	Rib thickness, surface, in.	Rib spacing, c. to c., in.	Area, sq. ft.	Effective armor, % total area	Openings, in.	Weight approx., lb.	Finished aggregate displaced, %
10 Lightweight	24	12	½	⅝	¼	2⅛	2	41	¾	10	21
15 Medium duty	24	12	¾	1	¼	2⅛	2	41	¾	15	21
20 General purpose	24	12	1	1¼	¼	2⅛	2	41	¾	20	21
30 Heavy duty	24	12	1¼	1¾	⅜	2⅞	2	41	1	30	21

STAIRS
- SECTION - 12

Section Number 1/5 Catalog Number

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THIS INDEX INCLUDES ONLY MANUFACTURERS WHOSE CATALOGS ARE FILED IN THIS SECTION

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American Mason Safety Tread Co. 12/10
Bessler Disappearing Stairway Co. 12/5
Central Wire and Iron Works 12/1
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Duvinage Spiral Stair Co. 12/2
Farley & Loetscher Mfg. Co. 12/7
Frazier, Inc. 12/6
Jones & Laughlin Steel Corp. 12/3
Logan Co. 12/18
Marcrome Art Marble Co. 12/12
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Fire Escape
See Fire—Escapes—Tubular

DISAPPEARING
Stairways
See Stairs—Disappearing

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LADDER SHOES
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CENTRAL WIRE AND IRON WORKS

Patented "Ever-Ready" Steel Stairs

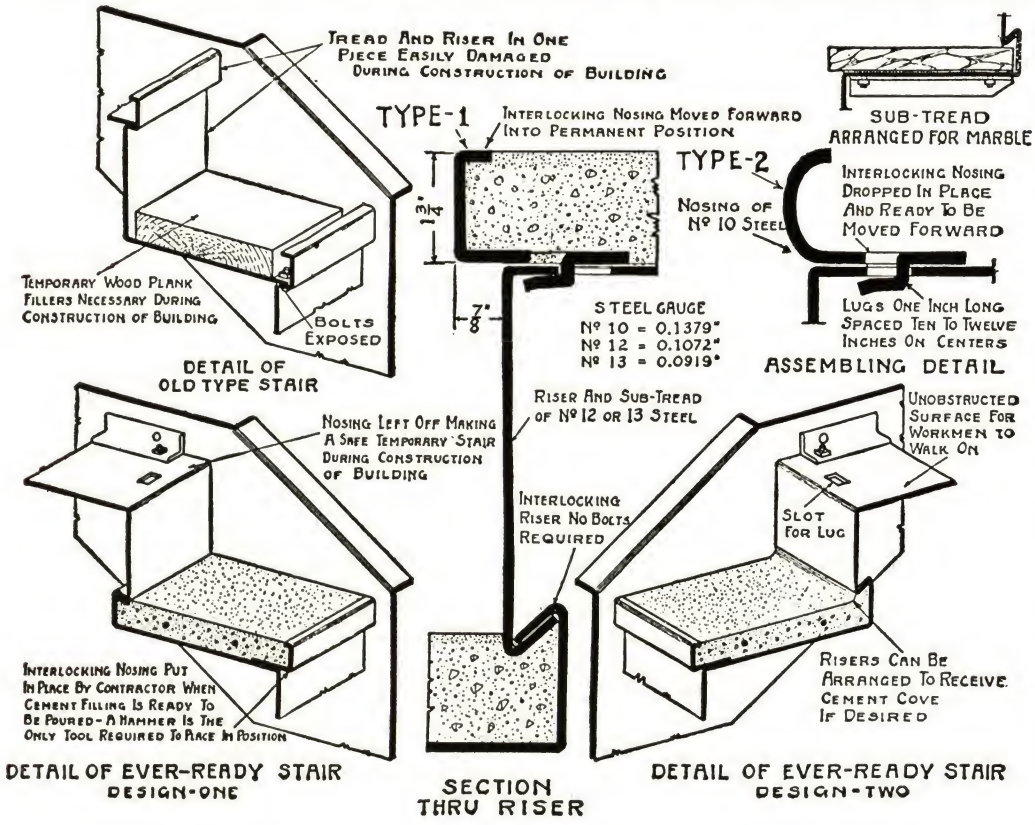
309 Gratiot Street, ST. LOUIS, MO.

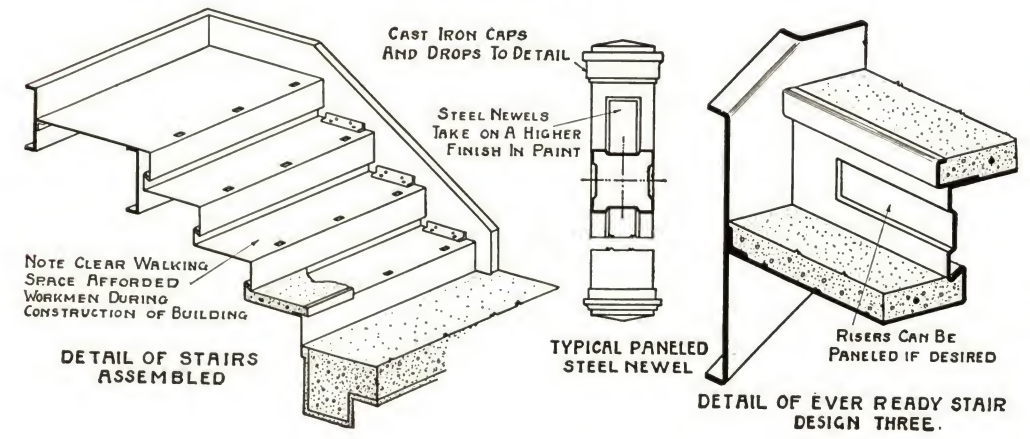
Products

"Ever-Ready" Steel Stairs.
Also Fire Escapes and Ornamental Iron Work.

Outstanding Features of Our Improved "Ever-Ready" Steel Stairs

(1) Used as an immediate service stair during construction of building.
(2) Attractive, practical and less costly than the old method of construction.
(3) The separate nosing is of much heavier gauge material than generally used for treads and risers.
(4) Easily broom-cleaned before tread filler is applied.
(5) Speed of erection is accelerated.
(6) Minimizes accidents.
(7) Nosing is slid into place in much the same manner that safety treads are now set when applying the filler, and with no greater effort or expense.
(8) Nosings are not damaged as is often the case with nosings fixed on stairs at the factory.
(9) Requires no temporary tread filler of planks or other substances.
(10) Furnished in large sections ready to set in place.
(11) Steel newels, with cast caps and pendants, may be paneled and are more modern than the newels ordinarily used in general stair construction.
(12) Newels in our construction serve only as railing stops.
(13) Stairs are supported on floors and platforms—not dependent on support by newels.





Specifications

Stairs—Shall be of the "Ever-Ready" type of construction as manufactured by the Central Wire and Iron Works, St. Louis, Mo., and as illustrated in Sweet's Catalog File—Architectural, and designed to carry a live load of 125 lbs. per sq. ft., arranged for concrete fill 1¾ in. thick furnished by others.

Stringers—Shall be not less than $\frac{3}{16}$-in. steel plate bent in channel form 10 in. or more in width. Exposed or face strings to have wrought iron mouldings at top and bottom flanges riveted to strings. All exposed rivets on face strings to be countersunk.

Treads and Risers—Of interlocking construction, not less than No. 13 blue annealed steel with separate interlocking nosing of No. 10 gauge with punched lugs 1 in. long, spaced 10 to 12 in. on centers, to engage in corresponding slots punched in treads.

Nosings—To be attached (slid into place) at time of inserting the fill by Contractor for that material. (See details.)

Platforms and Landings—Where required, shall be No. 12 or No. 13 steel supported on angle frames riveted to stringers and reinforced with tees not more than 2 ft. on centers. Where stair walls are not of bearing kind, struts or hangers are to be supplied.

Newels—Of No. 12 blue annealed steel with sunken panels and cast iron caps and pendants as shown.

Railings—To be of design shown on drawings, top channels punched to receive wood hand rails supplied by others.

Painting—The entire stairwork to receive a coat of shop paint, except that part of treads where concrete fill is used.

Estimates

Send plans or sketches and we will gladly furnish preliminary estimates promptly.

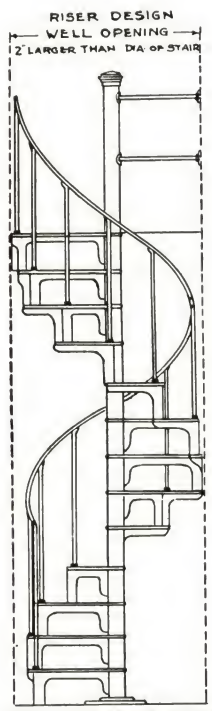
DUVINAGE SPIRAL STAIR CO.

89 West Lee Street, HAGERSTOWN, MD.

Duvinage Riser Design Spiral Stair

Duvinage Riser Design Spiral Stair is shown below at left. Treads and platforms have open risers and are made of cast iron, mounted on a center column of steel pipe. Safety is permanently assured by the scientifically constructed raised diamond tread surface, and maximum strength and wearing quality are provided by a special analysis metal. Treads are made either right or left-hand (left-hand shown), 12 to the circle in 42 to 96 in. diameter stairs, and 16 to the circle in 48 to 96 in. diameter stairs. Platforms are made square, quarter circular, 60° and 90° triangular. Well opening should be 2 in. larger than diameter of the stair to provide sufficient clearance and to allow use of standard size platform. Winged hub and bottom flange are of cast iron. The winged hub is attached to rolled diamond steel plate when a larger or irregularly shaped platform is necessary, or to the floor construction extending into the well when no platform is required, and serves to hold the stair in position at top. Bottom flange serves to hold the stair in position at base. Landing platform is attached to the well opening construction with expansion bolts, and no additional bracing is necessary unless stair is unusually high, in which case intermediate bracing is required and supplied to meet existing conditions. Railing construction consists of 1 in. inside diameter steel pipe, single on stair, supported on 1 in. inside diameter steel pipe balusters, one to each tread. Double horizontal 1 in. inside diameter steel pipe railing is provided around the well opening when required. An angle fitting is inserted in top of baluster and attached to underside of the handrail with a flat head machine screw. The head of a carriage bolt is cast in a flange which is inserted in bottom of the baluster and extends through lower tread and is secured with a nut. This serves to hold treads together rigidly in their proper position. Railing height is 35 in. from surface of tread at outer edge to center of hand rail. Riser height and number of treads to the circle are affected by height between floors. To provide sufficient headroom under the platform, riser height should not be less than 8½ in. on a stair of 12 treads to the circle and a platform of not more than 90°. When a stair of 16 treads to the circle is required, a riser height as low as 7 in. may be used, as well as a special platform of more than 90°.

By calculating the number of risers required, 12 or 16 treads to the circle, the relative positions of starting and landing can be determined, and a right or left-hand stair decided upon for most convenient access



LEFT HAND STAIR ELEVATION

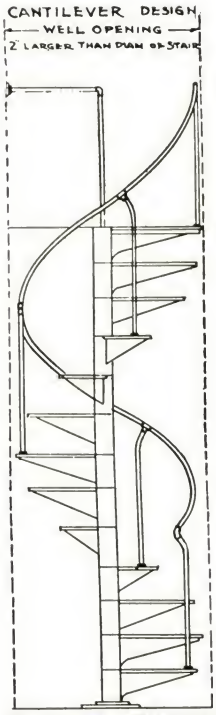
Duvinage Cantilever Design Spiral Stair

Duvinage Cantilever Design Spiral Stair is shown below at the right. Treads are correctly designed upon the cantilever principle, and so constructed that they may be used either right or left-hand (right-hand shown), 12 to the circle in 42 to 60 in. diameter stairs and 16 to the circle in 48 to 60 in. diameter stairs. Duvinage Cantilever Spiral Stairs are manufactured only in diameters of 42 to 60 in. Otherwise the construction of this stair is the same as our Riser Design, excepting there is only one baluster to every third tread in the railing construction, single horizontal railing around the well opening, and the treads are held in position by setscrews in the hub. Platforms are the same as those used in our Riser Design stair.

For Special Construction

Deviations from standard specifications of the Riser Design stair to meet the user's requirements may be made at proportionate increase in cost. Larger or irregularly shaped platforms of cast iron or steel plate may be furnished when necessary.

Abrasive treads and platforms may also be furnished. Treads and platforms may be recessed for composition flooring. Risers may be closed by steel inserts, or treads and platforms may be cast with solid risers. Single or double railing of larger diameter may be supplied; also square bar or round iron balusters with handrail of brass pipe, wrought iron, architectural brass or rolled steel. Steel beaded stringer may be attached to the outer edge of the treads if desired.



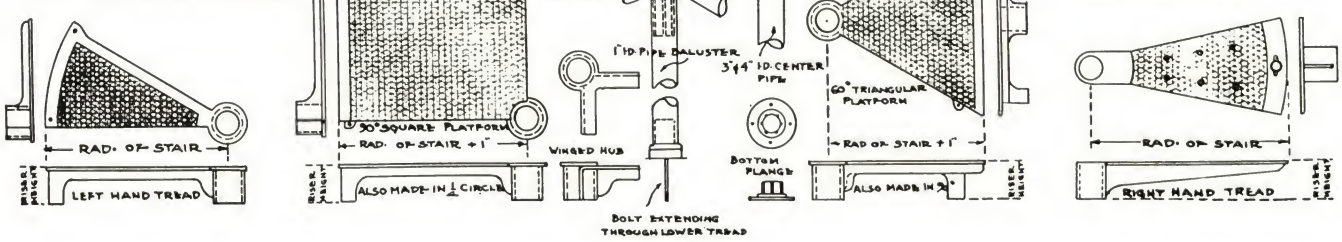
RIGHT HAND STAIR ELEVATION

Information for Requesting Estimates and Ordering

State exact diameter and height of stair from finished floor to floor levels. Sketch starting and landing positions desired, showing relative walls or partitions if near stair, illustrate well opening and give accurate measurements for platform and railing construction around well opening. Also state deviations from standard construction, if any.

Specifications

For convenience, the following specifications may be copied bodily: Furnish and erect where shown on plans, Duvinage Spiral Stairs, as manufactured by the Duvinage Spiral Stair Co., West Lee Street, Hagerstown, Md., (.....) spiral stairs (.....) in. in diameter, (.....) ft. high, of cast iron raised diamond surface treads; steel center pipe 3 in. inside diameter for 42 in. and 48 in. diameter stairs, or 4 in. inside diameter for 54, 60, 66, 72, 84 and 96 in. diameter stairs; handrail and balusters of 1 in. inside diameter steel pipe, single on stair and double around well opening, one baluster to each tread; finished size of floor opening 2 in. larger than diameter of stair.



FOUNDED 1850

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

Jones & Laughlin Building
PITTSBURGH, PA.

For Sales Offices, Warehouses and Fabricating Works, see pages on Tubular Products

Products

J & L LIGHTWEIGHT CHANNELS for Stair Stringers and other uses.

Also J & L Structural Shapes and Fabricated Structural Work, Columns, Girders, Trusses, Plate Work, Tanks, Mill and Factory Buildings; Steel Piling; J & L Wire Products; J & L Bars for Concrete Reinforcement.

For J & L Junior Beams, and Tubular Products, see page numbers in File Index.

Description of J & L Lightweight Channels

J & L Lightweight Channels are produced on modern rolling mills and are similar in type to standard channel sections.

They have constant dimensions, making fabricating and fitting to other work economical.

Due to the rolled shape, the material is ready, as received, for fabrication into various uses, including stair stringers, thereby saving time.

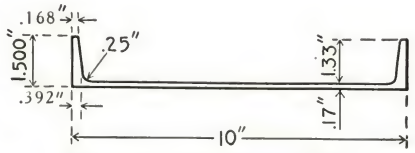
The rolled shape also reduces to the minimum shop equipment for fabrication. J & L Lightweight Channels are economical in weight and form a strong structure.

The lines are straight and true, resulting in proper fitting at the joints, thus making a well-finished installation.

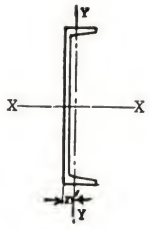
These sections are now available in two sizes: 10 in. 8.4 lb. per ft. and 12 in. 10.6 lb. per ft.

J & L Lightweight Channels are available for immediate shipment from the following points: Chicago, Cincinnati, New Orleans, New York, Pittsburgh and Detroit. Carried in lengths of 20, 25, 30, 40 and 50 ft.

Typical Installation



Dimensions above are for C-752
See table below for C-700



DIMENSIONS

Section index	Depth of channel, in.	Wt. per ft., lbs.	Flange width: Inch and decimal parts	Flange width: Inch and fractional parts	Web thickness: Decimal parts of inch	Web thickness: Fractional parts of inch
C-752	10	8.4	1.500	1½	.170	11/64
C-700	12	10.6	1.500	1½	.190	3/16

FUNCTIONS OF SECTIONS

Area, sq. in.	Axis X-X (perpendicular to web): I	S	r	Axis Y-Y (parallel to web): n′	S′	r′	I′
2.47	32.3	6.5	3.61	0.29	0.28	0.37	0.33
3.12	55.8	9.3	4.23	0.27	0.32	0.35	0.39

ALLOWABLE LOADS

	Index No.	Depth of channel, in.	Wt. per ft., lbs.	Bend mom., ft. lbs.	Max. load	Span, feet: 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Fiber Stress, 18,000 Lbs. per Sq. In.																														
Total load in thousands of pounds	C-752	10	8.4	9680	40.8	38.7	25.8	19.4	15.5	12.9	11.1	9.7	8.6	7.7	7.0	6.5	6.0	5.5	5.2	4.8	4.6	4.3	4.1	3.9	3.7	3.5	3.4	3.2	3.1	3.0
Total deflection, in.						.007	.017	.030	.047	.067	.091	.119	.151	.186	.225	.268	.315	.365	.419	.477	.538	.603	.672	.745	.821	.901	.985	1.073	1.164	1.259
Total load in thousands of pounds	C-700	12	10.6	13947	54.7		37.2	27.9	22.3	18.6	15.9	13.9	12.4	11.2	10.1	9.3	8.6	8.0	7.4	7.0	6.6	6.2	5.9	5.6	5.3	5.1	4.9	4.6	4.5	4.3
Total deflection, in.						.006	.014	.025	.039	.056	.076	.099	.126	.155	.188	.223	.262	.304	.349	.397	.449	.503	.560	.621	.684	.751	.821	.894	.970	1.05
Load in lbs. per lin. ft. of channel	C-752	10	8.4			19360	8604	4840	3098	2151	1580	1210	956	774	640	538	458	395	344	303	268	239	215	194	176	160	146	134	124	115
	C-700	12	10.6				12398	6974	4463	3100	2277	1743	1378	1116	922	775	660	569	496	436	386	344	309	279	253	231	211	194	179	165
Fiber Stress, 20,000 Lbs. per Sq. In.																														
Total load in thousands of pounds	C-752	10	8.4	10756	40.8		28.7	21.5	17.2	14.3	12.3	10.7	9.6	8.6	7.8	7.2	6.6	6.1	5.7	5.4	5.1	4.8	4.5	4.3	4.1	3.9	3.7	3.6	3.4	3.3
Total deflection, in.							.019	.033	.052	.074	.101	.132	.168	.207	.250	.298	.350	.406	.466	.530	.598	.670	.747	.828	.912	1.00	1.09	1.19	1.29	1.40
Total load in thousands of pounds	C-700	12	10.6	15497	54.7		41.3	31.0	24.8	20.7	17.7	15.5	13.8	12.4	11.3	10.3	9.5	8.9	8.3	7.7	7.3	6.9	6.5	6.2	5.9	5.6	5.4	5.2	5.0	4.8
Total deflection, in.							.016	.028	.043	.062	.084	.110	.140	.172	.209	.248	.291	.338	.388	.441	.498	.559	.622	.690	.760	.834	.912	.993	1.08	1.17
Loads in lbs. per lin. ft. of channel	C-752	10	8.4				9556	5375	3440	2389	1755	1344	1062	860	711	597	509	439	382	336	298	265	238	215	195	178	163	149	138	127
	C-700	12	10.6				13778	7750	4960	3444	2531	1937	1531	1240	1025	861	734	633	551	484	429	383	343	310	281	256	234	215	198	183

Note: Loads above dotted lines will produce maximum allowable shear in webs; loads above solid lines will produce excessive deflections.

THE ORNAMENTAL IRON WORK COMPANY

Stairways and Railings

929 Sweitzer Avenue
SOUTH AKRON, OHIO

REPRESENTATIVES

BOSTON, MASS., Construction Supply Co.
BUFFALO, N. Y., Hawkins-Howlett Co.
CHARLESTON, W. VA., Fireproof Products Co.
CINCINNATI, OHIO, Al Levinson Co.
COLUMBUS, OHIO, Henry P. Howe Co.
DAYTON, OHIO, John G. Poole Co.
DES MOINES, IOWA, Des Moines Stair Co.
ERIE, PA., Geo. H. Kraft & Son
GRAND RAPIDS, MICH., Michigan Building Materials Co.
MUNCIE, IND., C. O. Bridgeman
NEW YORK CITY, James P. Foraker
PHILADELPHIA, PA., Jas. Clancy
PITTSBURGH, PA., E. A. Butts
POUGHKEEPSIE, N. Y., Hudson Valley Builders Steel Co.
WHEELING, W. VA., W. E. Britt Co.

For our pages on Pipe and Bridge Railings, see File Index

32 YEARS OF STAIR-MAKING EXPERIENCE

The Ornamental Iron Work Company is pleased to offer to architects and owners the benefit of their experience in designing building stairs of all types, from any material—particularly steel, bronze, aluminum, benedict nickel or stainless steel.

SERVICE TO ARCHITECTS

We will be glad to furnish to registered architects typical details or suggested designs pertaining to any type of stair problem. Our representatives will be pleased to assist in the preparation of specifications for any work in their territory.

KLIP-LOK STEEL STAIRS

A New and Improved Design

KLIP-LOK
IT LOCKS

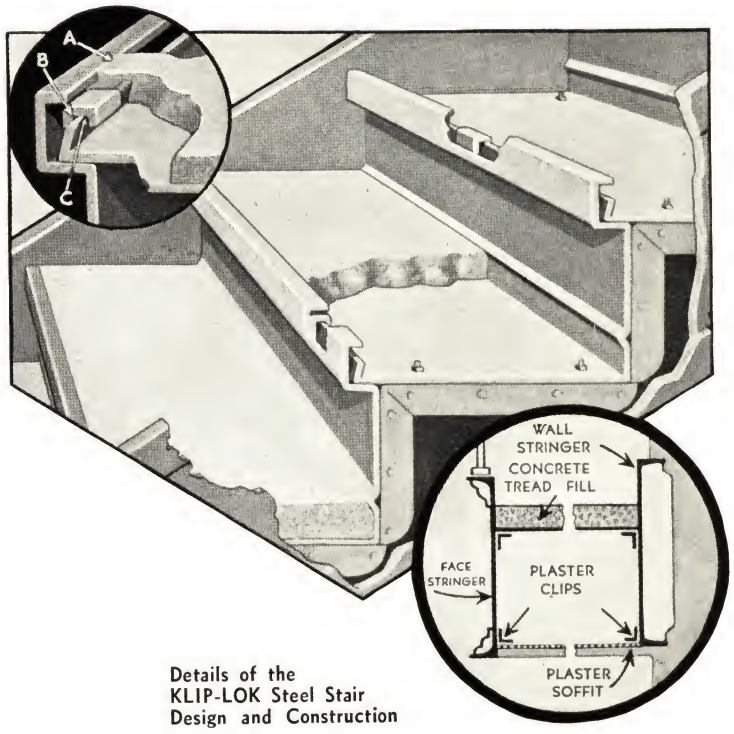
U. S. Patent No. 1,835,759
Canadian Patent No. 331,888

Klip-Lok stairs embody the new streamline tendency in design with a greatly increased factor of safety.

INTERLOCKING TREADS

The clean, unmarred surface of Klip-Lok stairs is obtained by concealing the fastening devices within the nosings.

This new and improved design provides an interlocking tread and riser which holds the nosing rigid, and prevents separation from the fill at joint "A" (see accompanying illustration).



Details of the KLIP-LOK Steel Stair Design and Construction

NOSING FAILURE PREVENTED

Klip-Lok nosings are reinforced by the upturned flange on the front of each tread. The flange engages with the new style Klip "B" as indicated at "C."

By this construction, nosing failure is entirely eliminated, a point in which architects and owners are vitally interested.

INCREASED SAFETY

The extra strength developed by the use of these Klips permits a much narrower lip on the tread nosing, thereby minimizing the danger of slipping.

IMPORTANT ADVANTAGES OF KLIP-LOK STAIRS

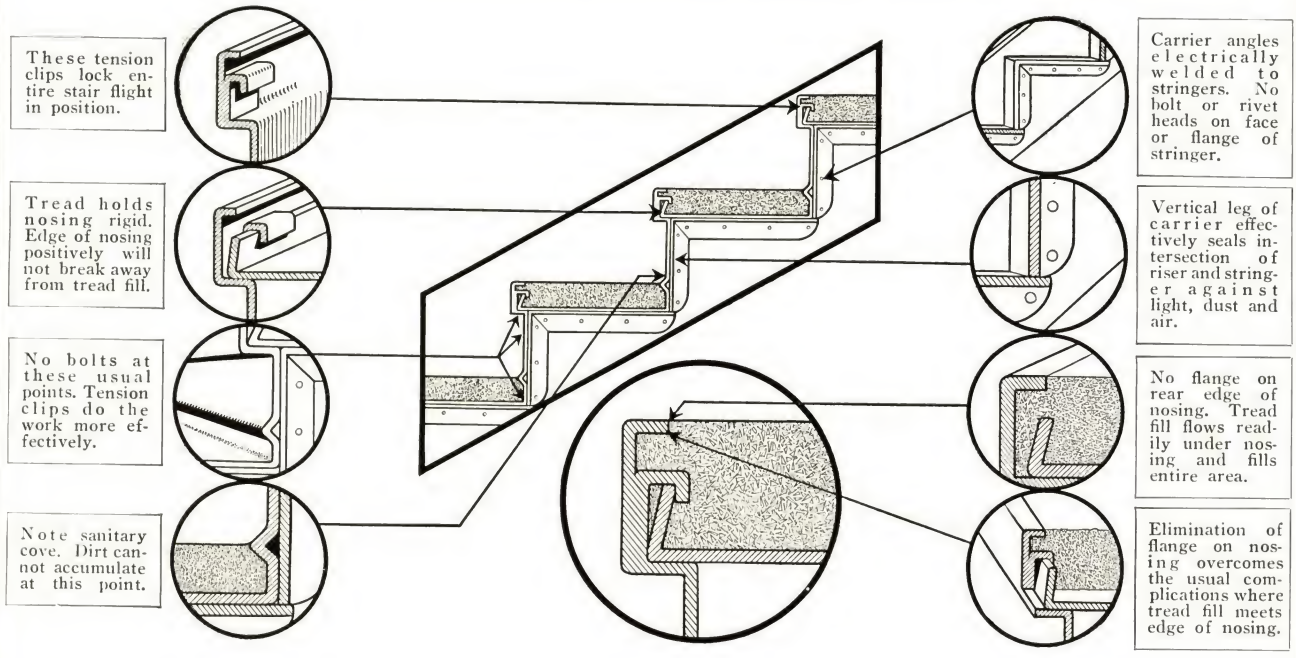
Klip-Lok stairs are easily erected at less cost, have fewer parts, and all treads are interchangeable. Mastic, cement, or other types of tread fill are easily applied, since there are no obstructing flanges on the nosing. Klip-Lok stairs are:

(1) **Simpler in Design**—Three "Klips" perform the service of seven bolts in each individual tread and riser. Fewer holes reduce the possibility of error, an important advantage from an erection standpoint.

(2) **Stronger in Construction**—Tread utilized to support the nosing — tests conducted at the University of Akron Engineering College demonstrate the amazing strength of this new construction.

(3) **Safer in Service**—Reinforced nosing held rigid at point where fill meets nosing. Treads can never work loose, because they are locked into nosing.

(4) **Smarter in Appearance**—The complete elimination of bolt heads and other structural blemishes produces a clean smart looking stair. Narrower lip on nosing adds to appearance of treads. Other improved points of construction are incorporated in standard details, prints of which will be mailed to registered architects upon request.



IMPORTANT CONSTRUCTIONAL FEATURES OF KLIP-LOK STAIRS

KLIP-LOK STAIR SPECIFICATION

All *stairs* shall be of Klip-Lok tread and riser construction as manufactured by the ORNAMENTAL IRON WORK COMPANY, South Akron, Ohio.

Stringers—Shall be J & L light weight channels. Face stringer to be neatly finished with moulding as shown. Where stringer connects to newel, moulding shall be neatly returned to form a paneled effect. Stringer connections must be concealed; no exposed angle or lug connections will be permitted. Carriage angles shall be electrically spot-welded to stringers; no rivets or bolt holes to show on face of string.

Treads and Risers—Shall be one continuous piece of blue annealed sheet steel (gauge dependent on span), and shall be formed into shape to provide sanitary cove and Klip-Lok type of interlocking nosing. Risers must be drawn tightly against vertical leg of carriage angles.

Nosings—Shall be so constructed that flange on tread shall engage tightly with Klips welded to inner faces of nosings.

Platform Landings—Shall have wall stringer around entire platform. Angle or tee iron reinforcings must be supported by cast or forged pockets bolted or welded to stringers. Nosings of platforms must be reinforced in same manner as tread nosings.

Newels—Shall be 4 x 4 pressed steel with neatly rounded corners. (Or of type and style shown on details.)

Balustrades—Shall be ½-in. square bars, 4 in. on centers, electrically welded into top and bottom channel. (Or of type and style shown on details.)

Plaster Clips—Shall be attached to stringers, one at each tread. (If stair is to have plastered soffit.)

General Conditions—Shop details shall be furnished architect through the contractor. Malleable iron wall rail brackets shall be spaced 5 ft. on centers and securely fastened to the wall. Pipe railings shall be 1½-in. standard black pipe with standard fittings. All stairs to be painted one shop coat of paint. Contractor must guarantee stairs against material defect for one year and to carry a load of not less than 125 lbs. per sq. ft. with safety factor of 4 at all times.

THE BESSLER DISAPPEARING STAIRWAY CO.

AKRON, OHIO

BESSLER DISAPPEARING STAIRWAYS IN WOOD AND STEEL

Model 35

Models 35 and 45 are very similar in operation and construction, except Model 45 is made for a wider finished opening. Both are equipped with a spring drum attached to each jamb bracket to raise the panel and hold it in a closed position. A spring drum attached to the metal frame located under the stringers assists the operator in sliding the stringers over panel.

Model 60

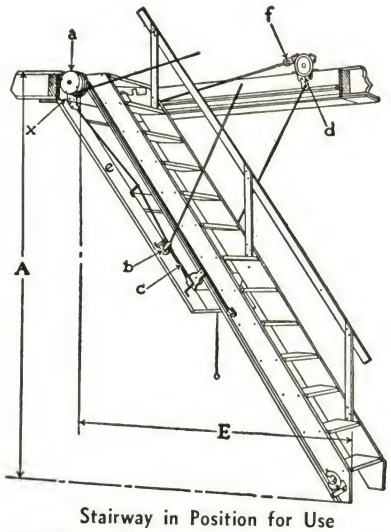
Models 50 and 60 are very similar in operation and construction, except Model 60 is made for a wider finished opening. Both are equipped with a spring drum on each side of stairway. The cables attached to these drums are arranged so they will assist the operator in sliding stringers over panel also raise the panel and hold it in that position.

Model 75

This is one of our latest improved stairways equipped with 1⅛-in. panel for a finished opening 2 ft. 6 in. wide. Length of opening varies according to floor to floor height. It has four spring drums, two of these are installed on jambs to operate the panel and the other two are at the hinged end of opening and assist the operator in sliding the stairway over panel.

Model 89

This is one of the heavier models. The panel is 1⅛ in. for a finished opening 2 ft. 6 in. wide. Length of opening varies according to floor to floor height. It has two spring barrels and two spring drums all located at hinged end of opening. One assists the operator in sliding stringers over panel and the other raises panel and holds it in that position. A lug on each outside cable strikes against sheave wheel on jamb bracket when stairway is opened and holds it to the correct run.



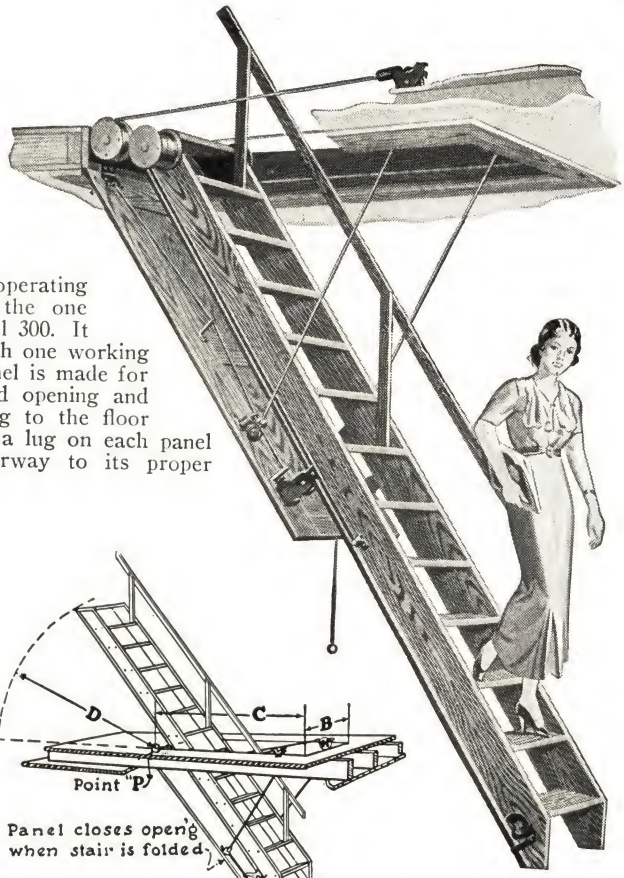
Stairway in Position for Use

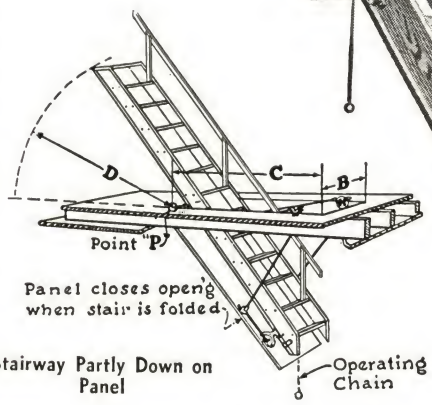
Key for Models 89, 97 and 300

a—Spring drums
b—Cable holders
c—Equalizing bars
d—Pulley brackets
e—Stair panel
f—Lugs
x—Trimmer

Model 97

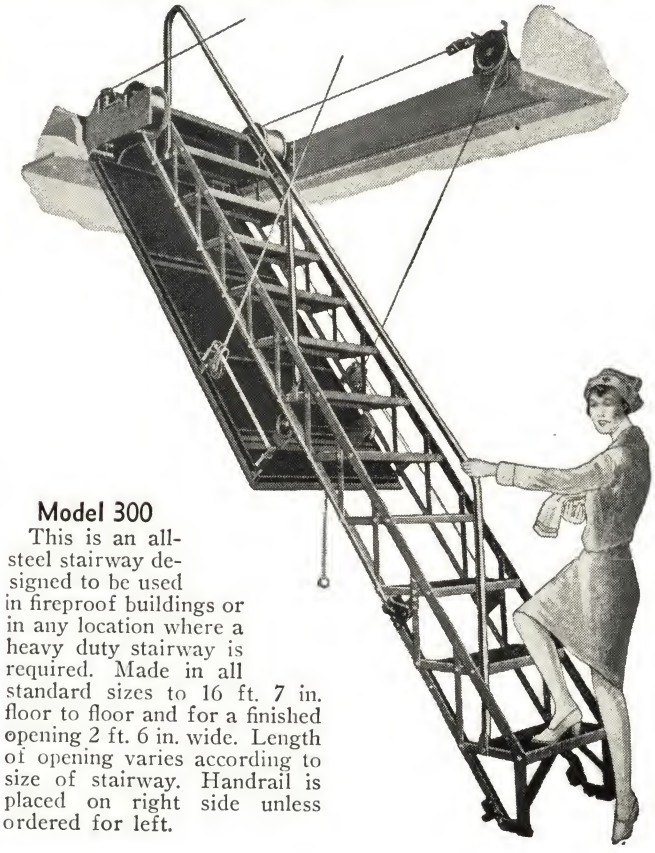
The new improved Model 97 stairway has an operating machine very similar to the one used on the all-steel Model 300. It has four spring drums, each one working separately. The 1⅛-in. panel is made for a 2 ft. 6 in. wide finished opening and the length varies according to the floor to floor height. There is a lug on each panel cable that holds the stairway to its proper run.





Stairway Partly Down on Panel

The main bearings on Models 89, 97 and 300 are brass bushed and the stringers operate on roller bearings.



Model 300

This is an all-steel stairway designed to be used in fireproof buildings or in any location where a heavy duty stairway is required. Made in all standard sizes to 16 ft. 7 in. floor to floor and for a finished opening 2 ft. 6 in. wide. Length of opening varies according to size of stairway. Handrail is placed on right side unless ordered for left.

DIMENSIONS FOR VARIOUS FLOOR TO FLOOR HEIGHTS

A—Height from floor to floor	B—Width of finished opening between jambs	C—Length of finished opening between jambs	D—Dimension from upper end of stair stringer to point "P"	E—Distance from front edge of stair stringer to finished jamb
Models 35 and 50				
7′ - 7″	2′ - 0″	5′ - 6″	4′ - 10″	5′ - 6″
8′ - 1″	2′ - 0″	5′ - 6″	5′ - 3 ″	5′ - 10″
8′ - 7″	2′ - 0″	5′ - 6″	5′ - 7 ″	6′ - 2″
9′ - 1″	2′ - 0″	5′ - 6″	5′ - 11″	6′ - 6″
9′ - 7″	2′ - 0″	6′ - 0″	6′ - 6 ″	6′ - 10″
10′ - 1″	2′ - 0″	6′ - 0″	6′ - 10″	7′ - 2″
10′ - 7″	2′ - 0″	6′ - 0″	7′ - 1 ″	7′ - 6″
Models 45 and 60				
7′ - 7″	2′ - 6″	5′ - 6″	4′ - 10″	5′ - 6″
8′ - 1″	2′ - 6″	5′ - 6″	5′ - 3 ″	5′ - 10″
8′ - 7″	2′ - 6″	5′ - 6″	5′ - 7 ″	6′ - 2″
9′ - 1″	2′ - 6″	5′ - 6″	5′ - 11″	6′ - 6″
9′ - 7″	2′ - 6″	6′ - 0″	6′ - 6 ″	6′ - 10″
10′ - 1″	2′ - 6″	6′ - 0″	6′ - 10″	7′ - 2″
10′ - 7″	2′ - 6″	6′ - 0″	7′ - 1 ″	7′ - 6″
Model 75				
7′ - 7″	2′ - 6″	5′ - 10′	4′ - 6″	5′ - 6″
8′ - 1″	2′ - 6″	5′ - 10″	4′ - 11″	5′ - 10″
8′ - 7″	2′ - 6″	5′ - 10″	5′ - 3″	6′ - 2″
9′ - 1″	2′ - 6″	5′ - 10″	5′ - 6″	6′ - 6″
9′ - 7″	2′ - 6″	6′ - 0″	6′ - 4″	6′ - 10″
10′ - 1″	2′ - 6″	6′ - 0″	6′ - 6″	7′ - 2″
10′ - 7″	2′ - 6″	6′ - 0″	7′ - 0″	7′ - 6″
Model 89				
7′ - 7″	2′ - 6″	5′ - 10″	4′ - 4″	6′ - 5″
8′ - 1″	2′ - 6″	5′ - 10″	4′ - 11″	6′ - 10″
8′ - 7″	2′ - 6″	5′ - 10″	5′ - 7″	7′ - 3″
9′ - 1″	2′ - 6″	6′ - 0″	6′ - 2″	7′ - 7″
9′ - 7″	2′ - 6″	6′ - 4″	6′ - 4″	8′ - 0″
10′ - 1″	2′ - 6″	6′ - 8″	6′ - 8″	8′ - 4″
10′ - 7″	2′ - 6″	6′ - 11″	7′ - 1″	8′ - 9″
Models 97 and 300				
7′ - 7″	2′ - 6″	5′ - 10″	5′ - 2″	6′ - 5″
8′ - 1″	2′ - 6″	5′ - 10″	5′ - 9″	6′ - 10″
8′ - 7″	2′ - 6″	5′ - 10″	6′ - 5″	7′ - 3″
9′ - 1″	2′ - 6″	6′ - 0″	7′ - 0″	7′ - 7″
9′ - 7″	2′ - 6″	6′ - 4″	7′ - 2″	8′ - 0″
10′ - 1″	2′ - 6″	6′ - 8″	7′ - 6″	8′ - 4″
10′ - 7″	2′ - 6″	6′ - 11″	7′ - 11″	8′ - 9″
11′ - 1″	2′ - 6″	7′ - 3″	8′ - 4″	9′ - 2″
11′ - 7″	2′ - 6″	7′ - 6″	8′ - 7″	9′ - 6″
12′ - 1″	2′ - 6″	7′ - 9″	8′ - 11″	9′ - 10″
12′ - 7″	2′ - 6″	8′ - 1″	9′ - 3″	10′ - 3″
13′ - 1″	2′ - 6″	8′ - 4″	9′ - 7″	10′ - 8″
13′ - 7″	2′ - 6″	8′ - 8″	9′ - 11″	11′ - 0″
14′ - 1″	2′ - 6″	9′ - 0″	10′ - 3″	11′ - 5″
14′ - 7″	2′ - 6″	9′ - 3″	10′ - 6″	11′ - 9″
15′ - 1″	2′ - 6″	9′ - 6″	11′ - 1″	12′ - 3″
15′ - 7″	2′ - 6″	9′ - 9″	11′ - 7″	12′ - 10″
16′ - 1″	2′ - 6″	10′ - 1″	11′ - 11″	13′ - 1″
16′ - 7″	2′ - 6″	10′ - 5″	12′ - 4″	13′ - 4″

FRAZIER, INC.

Manufacturers of Balanced Standard and Two-Piece Disappearing Stairs

1207 Magnolia Street, PITTSBURGH, PA.

SOLD BY LUMBER AND SUPPLY DEALERS EVERYWHERE

FRAZIER BALANCED STANDARD AND TWO-PIECE DISAPPEARING STAIRS

Frazier Balanced Disappearing Stairs were designed to provide unusually sturdy construction, easy operation and maximum safety to the user. At the same time the designer, a contractor for many years, sought to eliminate those features of the usual type of disappearing stairs, which his experience showed caused difficulties in installation and operations. That the designer was successful is demonstrated by more than 7000 installations of Frazier Stairs in all parts of the country.

Frazier Balanced Disappearing Stairs are protected by Patent No. 1883777 and other patents pending.

Overhanging weight of stair balances and closes door. By pulling cord slightly door is brought down.

Features

An examination of the illustration will indicate the outstanding advantages of Frazier Stairs which distinguish them from the usual type of disappearing stairs.

The Frazier Stair is the only complete stair made. As shown. the ceiling panel, hardware and operating device are shipped *completely assembled in the jambs* ready for mounting in the rough opening. This eliminates entirely assembling on the job with the attendant possibilities of error or improper installation.

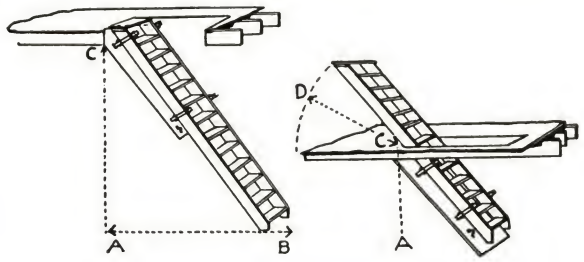
Jamb can be furnished in any depth to suit the requirements of the thickness of the joist, floor and ceiling construction. To install it is only necessary to nail the jamb in the opening, taking care that the door panel can move freely.

As soon as the jamb has been nailed into place the stairs are inserted in the guide rollers, the ring on the controlling device is attached to the hook on one of the treads and the stair is ready to operate.

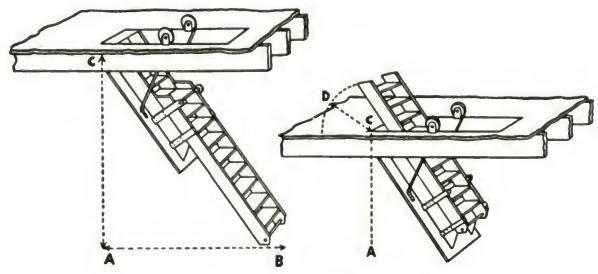
An unusual and important advantage of Frazier stairs is the balancing feature which makes the stair easy to operate and eliminates entirely any weights or pulleys. This is described below.

THE TWO-PIECE DESIGN

The Two-Piece Design is strong, safe and durable. The unit is balanced and can be operated with ease by any woman. The top section of the stairs is permanently attached to the door. The bottom section is joined by steel brackets which allow this part to slide up and cover the top, forming a unit half the size of the original. The operation of the stairs is eased by two controls attached to the top of the door jamb. Diagram shown below will illustrate these features more clearly.



Standard Design



Two-Piece Design

DIMENSIONS

Model No.	Regular Series, rough opening	Jumbo Series, rough opening	Floor to floor	Bottom projection A—B	Roof clearance C—D	Regular Series, rough opening	Jumbo Series, rough opening	Floor to floor	Bottom projection, A—B	Roof clearance, C—D
0	26½"x48½"	30½"x48½"	7'-10" to 8'- 2"	54"	68"	26½"x68½"	30½"x68½"	7'-10" to 8'- 2"	59"	28"
1	26½"x50½"	30½"x50½"	8'- 2" to 8'- 7"	56"	70"	26½"x68½"	30½"x68½"	8'- 2" to 8'- 7"	61"	28"
2	26½"x50½"	30½"x50½"	8'- 7" to 8'-11"	58"	73"	26½"x68½"	30½"x68½"	8'- 7" to 8'-11"	63"	28"
3	26½"x52½"	30½"x52½"	8'-11" to 9'- 2"	60"	76"	26½"x68½"	30½"x68½"	8'-11" to 9'- 2"	65"	28"
4	26½"x52½"	30½"x52½"	9'- 2" to 9'- 7"	62"	78"	26½"x68½"	30½"x68½"	9'- 2" to 9'- 7"	67"	28"
5	26½"x57½"	30½"x57½"	9'- 7" to 10'- 0"	66"	84"	26½"x68½"	30½"x68½"	9'- 7" to 10'- 0"	71"	32"

Note: In ordering stairs specify exact floor to floor height, and also size of ceiling joist. Be sure to state floor to floor height and joist size (not floor to ceiling). In framing opening two dimensions must be considered to provide sufficient operating space. 1—Run on floor below. 2—Operating radius under roof. Reference to table of measurements shows exact dimensions required by various models.

Hardware

The hardware on the Frazier Stair is most important as it is unique in design and is largely responsible for the sturdy construction and easy operation of the stairs. All hardware is of cold rolled steel with japanned finish. No hardware appears on under side of door.

The door panel is attached to the jamb by two concealed hinges (see illustration). Each hinge is ⅛ in. thick, 2 ins. wide, by 6½ ins. long, with a steel pin at one end which fits into a socket countersunk in the jamb. The flat arm of the hinge is fastened to the door panel by five screws and, because of its length, serves as a stiffener for the joint between the rail and the stile.

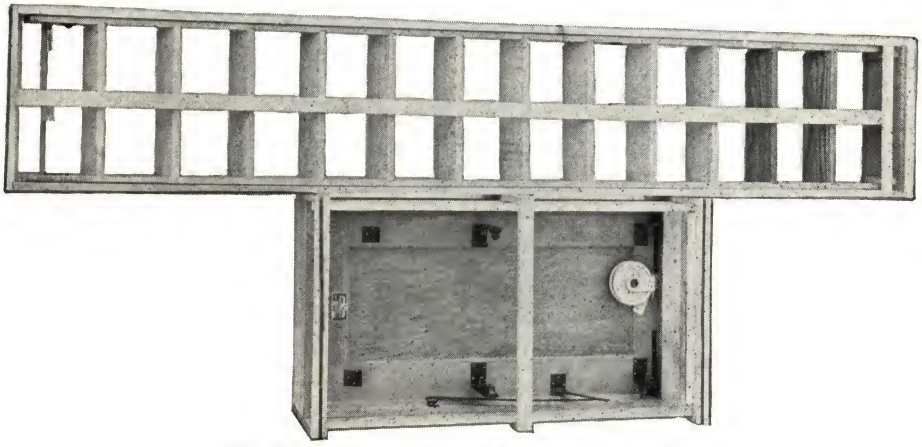
the panel. Panel is of fir suitable for any finishing but panels of other woods can be supplied upon specification. *Hand rails* will be furnished free of charge with all shipments.

Silk pull cord is attached to each door.

Operation

Due to the balancing feature the Frazier Stair is one of the easiest to operate as well as one of the safest types of disappearing stairs. A slight pull on the cord brings the stair down, into using position. The weight of the stairs holds them in position.

To return the stairs to the upper floor the operator lifts the bar and slides the stairs up on the panel until they are automatically locked in position. The control device assists in this operation so that there is very little effort required. When the stairs are locked on the panel the overhanging weight of the upper part of the stair balances and closes the door.



The Frazier Stair Is Shipped Completely Assembled

After removing the wood crates the jamb assembly and stairs are ready to install without further adjustment

Standard Design

The stairs slide up and down in two sets of specially designed roller guides which are fully patented and are exclusive with Frazier. The flange of the rollers is beveled to prevent binding of the stair stringer, and a shoulder on the other side of the roller eliminates any possible binding of the roller against the bracket.

To prevent the panel from being opened beyond the safe operating point a stay hinge is attached to the panel and the jamb.

There is also a stop which prevents the stairs from being raised beyond the proper operating point.

Of utmost importance is the controlling device which facilitates the movement of the stairs up or down through the guide bracket rollers. This consists of a drum carrying a steel tape ¾ in. wide and mounted on a spring controlled roller. The spring is carefully adjusted by hand to a predetermined tension which exactly counterbalances the weight of the stairs. This device has nothing to do with the operation of the panel and is only used to make the movement of the stairs through the guides as easy as possible. It is this device together with the balancing feature which make the Frazier Stair unusually easy to operate.

Materials and Construction

All material used in the construction of the Frazier Stair is the best obtainable for the purpose and the construction is the finest. There is nothing flimsy about these installations; they are designed and built to give long and satisfactory service even under unusual severe conditions of use.

The stairs are made of clear stock yellow pine with solid strings 1⅛x4⅝ ins., without grooves or slots. Treads are 1⅛x5⅝ ins., set into the strings and securely nailed with two 6D common nails.

Door rails are of white pine 1 in. thick furnishing a firm bed for the screws of the hardware, none of which is attached to

Shipping

In order to protect the unit during shipment the jamb assembly is lined with white oak paper. Assembled stairs are shipped in wood crates with steel band strapping. All stairs will be shipped assembled. Stairs are shipped with all adjustments such as spring tension, etc., made at the factory. *No adjustments whatever need be made by the erector.*

Guarantee

Frazier, Inc. fully guarantees all materials and workmanship in the Frazier Balanced and Two-Piece Disappearing Stairs and will replace without charge any part proving defective under normal usage within a period of ten years.

Models and Service to Architects

The various models listed are all constructed in the same thorough manner and differ only in dimensions. In nearly all cases one of these models will be found suitable for standard installation. However, if none of these seem to meet the requirements of the architect we will be glad to co-operate in the preparation of special styles or types as may be necessary. Architects are cordially invited to consult our service department at any time.

Architects Installing Frazier Stairs

L. Percival Hutton, Leesburg, Va.
Howard P. Sterling, Pittsburgh, Pa.
J. Bedford Wooley, Philadelphia, Pa.

MEMORANDA

FARLEY & LOETSCHER MFG. CO.

Ceiling Suspended Disappearing Sliding Stairways

DUBUQUE, IOWA

Products of Wood

The "PRESTO" and "VICTOR" DISAPPEARING SLIDING STAIRWAYS.

Also Sash, Doors, Blinds, Frames, Screens, Mouldings, Storm Sash, Cabinet Work, Stairs, Porch Work, Interior Trim, Veneered Doors, Combination Doors, Stock and Special Millwork.

"De Luxe" Kitchen Units, "Unipak" Wood Casements, "Unipak Unique" Double Hung Windows, "Farlo" Window Frames, "Lithowood" Doors, "On-the-Wall" Ironing Boards, Garage Doors, Colonial Front Entrances and Basement Sash Units.

For "Unipak" Wood Casements, "Unipak Unique" Double Hung Windows and "De Luxe" Kitchen Units, see File Index.

Qualitybilt DISAPPEARING STAIRWAYS

Presto and Victor Disappearing Stairs

"Presto" and "Victor" sliding disappearing Stairways are strong, rigid and non-collapsible. They are pleasing in appearance and made for installation in any type of building where access to an upper floor is desired without the loss of floor space required for a stationary stairway. These sliding stairways, when not in use, roll up through an opening in the ceiling entirely out of view, leaving the space below clear for any desired use. The space thus saved is often sufficient for a bathroom or generous closet. Treads are housed into stringers and rigid hand rail is firmly attached to either string. One end of ceiling door is fastened to well hole and overbalancing of stairway when up keeps this door tightly closed.

Operation—Both stairways operate the same, as they slide up and down on roller brackets attached to the ceiling door. The weight of the stairs and ceiling door are counterbalanced by springs. The "Presto" being much heavier is equipped with powerful springs, which wind steel cables on twin drums. The "Victor" is counterbalanced with two long coil springs only, as it is lighter in weight. There is no possibility of either stair coming down unassisted. When closed, nothing but the ceiling door is visible from below.

Shipping and Weights

Shipped knocked down in dustproof cartons. Complete instructions for installing included. Shipping weight of "Presto," approximately 175 lbs.; of "Victor," approximately 110 lbs.

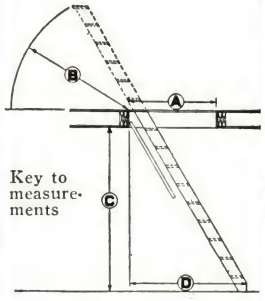
PRESTO AND VICTOR STAIRS FOR VARIOUS CEILING HEIGHTS
See diagram below for key to measurements

C Ceiling heights	D Projection into room when stair is down	B Projection into attic when stair is up	A Size of finished opening
The "Presto"			
7′ 6″ to 7′ 11″	7′ 2″	4′ 11″	2′ 6″ x 6′ 3″
8′ 0″ to 9′ 0″	7′ 6″	5′ 8″	2′ 6″ x 6′ 3″
9′ 1″ to 10′ 0″	8′ 1″	6′ 3″	2′ 6″ x 6′ 11″
10′ 1″ to 10′ 11″	8′ 10″	6′ 11″	2′ 6″ x 7′ 3″
11′ 0″ to 11′ 5″	9′ 1″	7′ 5″	2′ 6″ x 7′ 6″
11′ 6″ to 11′ 11″	9′ 6″	7′ 9″	2′ 6″ x 7′ 9″
12′ 0″ to 12′ 6″	9′ 10″	8′ 0″	2′ 6″ x 8′ 0″
The "Victor"			
7′ 4″	5′ 0″	4′ 6″	2′ 4″ x 4′ 6″
7′ 6″	5′ 3″	5′ 3″	2′ 4″ x 4′ 6″
8′ 0″	5′ 7″	5′ 9″	2′ 4″ x 4′ 6″
8′ 6″	5′ 10″	6′ 6″	2′ 4″ x 4′ 6″
9′ 0″	5′ 10″	6′ 6″	2′ 4″ x 4′ 6″

Literature

Illustrated folders and complete prices furnished on request. Address Department S-38.

The Presto



Guarantee

Qualitybilt Disappearing Stairways are guaranteed to last as long as the building. If any stairway does not prove satisfactory when properly installed it may be returned to us within 60 days at our expense and the full purchase price will be refunded.

The Victor

The Presto (Patented)

The "Presto" is of high grade construction throughout with wide treads and stringers. Very rigid and substantial, built for the most severe usage. The large ceiling panel permits taking bulky objects through opening. The operation is controlled by heavy steel cables, winding on powerful spring drums which counterbalance the weight of the stair and ceiling door and assist in the rolling of stairs up through the opening.

Specifications—Stairs complete include 1⅛-in. ceiling panel door, one flight of stairs with rigid hand rail and supports, all necessary *pressed steel* hardware, black japanned finish, two heavy spring drums and galvanized wire rope. Stringers are yellow pine, ¾x7¼ in. housed to receive 7-in. treads. Three reinforcing cross rods under treads. Stair stained serviceable brown, ceiling door not stained. No jambs or trim included. These furnished only as extras to match other room trim.

The Victor (Patented)

A serviceable, moderately priced stairway with simple but efficient hardware and especially adapted to limited spaces, as the ceiling door is smaller and stairs do not project so far into the room or hall as does the "Presto." Well built and gives good service. Rolls into attic on brackets attached to ceiling door. Does not require spring drums or cable. Sliding operation is controlled by an ingenious arrangement of friction brake on a control cord which prevents the stair from sliding down without a gentle pull, but does not interfere with raising it.

Specifications—Stairs complete include 1⅛-in. ceiling panel door, one flight of stairs, rigid hand rail with supports and complete hardware, black japanned. Stringers are yellow pine, ¾x4 in., housed to receive ¾x5-in. treads. Stairs stained dark brown. No jambs or room trim included, furnished only as extras to match other room trim.

AMERICAN BLUE STONE COMPANY

*AMBLUCO NON-SLIP BLUE STONE STAIR TREADS AND FLOORING

101 Park Avenue, NEW YORK, N. Y.

QUARRIES AND MILLS, AMBLUCO, WYOMING CO., N. Y.

Products

*Ambluco Non-slip Stair Treads and Landings for interior steel and concrete stairways; Ambluco Flooring, Thresholds and Wall Base for interior uses.

For *Genesee Valley and "North River" Blue Stones for exterior uses, and *Naturcleft Flagging, see File Index.

*Reg. U. S. Pat. Off.

"A Produce with a Real Guarantee"

Facilities

This company has well developed quarries on its own property of about 200 acres, located at Ambluco Wyoming County, N. Y. The mills and yards are equipped with the most modern machinery so that large volumes of business can be handled without delay.

One building 150 ft. long, devoted exclusively to the storing and finishing of Ambluco Products is heated during the cold weather so that orders can also be filled in the winter.

Ambluco Non-slip Stair Treads and Landings

These treads and landings have established themselves largely on their own merits. By those who have studied their qualifications or used them, they are declared to be superior to and more economical than any other type. Millions of square feet in use.

Attractive Color and Texture—Uniform color, even grained texture and standard sand sawed finish (free from saw marks and imperfections) give a splendid appearance. The distinctive light-blue shade blends well with adjacent light color surfaces or gives a sharp clean contrast with dark material. It is a fine, close grained blue stone, made up mostly of pure, hard quartz as shown below:

Mineralogically Considered

Fine, hard sand, mostly quartz	70%
Clay, as binding material	28%
Water	2%

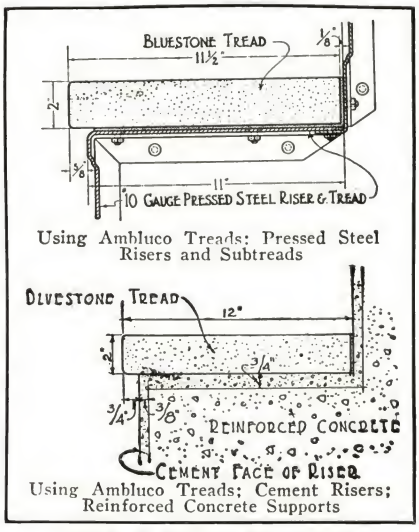
Non-slip—The non-slip property, due to fine grained quartz, does not grip the foot to cause tripping, but gives ample security against slipping at all times, whether wet or dry, without requiring resurfacing or replacing. These quartz particles are always uniformly distributed throughout the entire stone—a condition only produced by nature—and prevents surface from ever wearing smooth.

Durable—Extreme durability of the Ambluco Treads comes from the character of the material and steadily increasing hardness of the stone brought on by heat of the building, causing the treads to resist wear as they age.

*Registered U. S. Patent Office.

Ambluco Stair Treads, Hartford (Conn.) Fire Insurance Co. Building

Parker, Thomas & Rice, Architects
Marc Eidlitz & Son, Contractors



Using Ambluco Treads; Pressed Steel Risers and Subtreads

Using Ambluco Treads; Cement Risers; Reinforced Concrete Supports

Details of Ambluco Stair Treads

Density of the stone's structure which helps to give the remarkable wearing quality is revealed comparatively in the following table:

Crushing Strength

Rockport granite (Kidder's Hand Book)	17,750 lb. per sq. in.
Vermont marble	13,500 lb. per sq. in.
(Ambluco Non-slip) blue stone	19,970 lb. per sq. in.

This blue stone weighs only, approximately, 150 lb. per cu. ft. (or 25 lb. per sq. ft. 2 in. thick) when cut ready to set.

Sanitary—Ambluco Non-slip Treads and Landings are easily kept sanitary. Their great hardness prevents generation of dust and permits clean sweeping and mopping. The flat, non-porous surface has no grooves or pores to collect filth and disease germs.

Quiet—They are practically noiseless, do not resound from footsteps nor become loose and rattle. This feature is a truly essential quality for most buildings, and especially for hospitals where human beings are suffering, and for schools where it is so important that the pupils' minds are not distracted from their work.

Rust-proof—In contrast to many other treads these Ambluco treads do not become rusty themselves nor stain other adjacent materials.

Permanent and Economical—"Lasts the life of a school" is a fitting slogan, for, as indicated by tests and reputed records, Ambluco Non-slip Treads give satisfactory service in an average school for 50 to 60 years, while observance shows that at existing rate of advancements in scientific design and construction, a school is obsolete in that length of time and is frequently replaced by a new building. In fact, there are records where these blue stone treads have been removed in the wrecking of a school and the same treads later installed in a new school.

Initial cost of Ambluco Treads (1¼ in. to 2 in. thick) is about the same or less than other natural stone treads, and ultimate cost much less even than cheap metal and composition treads.

The facility with which they can be set on regular types of fabricated or pressed steel stair construction eliminates the great expense of specially designed steel members and use of dowels.

No maintenance cost is necessary after these blue stone treads are properly installed.

As a matter of fact, the Ambluco Treads and Landings can be safely adopted without first experimenting.

Specification Suggestions—*Identification*—AMBLUCO Non-slip Treads and Landings should be called by their brand-name, and although in many localities this name is well known, we suggest also (to avoid substitution of inferior stones) requiring that they are stenciled AMBLUCO and stating that they are produced by the AMERICAN BLUE STONE COMPANY, New York, N. Y.

Samples—AMBLUCO stenciled samples shall be submitted for approval of the architect before commencing the work. Substitution of softer New York or Ohio blue stone will not be accepted.

Finishes—Sand sawed or wet sand rubbed are the only two finishes which should be allowed. The former has proved entirely satisfactory and we endorse it as a standard. Planed and axed surfaces should be avoided as they impair the stone.

AMBLUCO Treads and Landings are universally used 2 in. thick, but can be furnished down to 1¼ in. Complete specifications will be supplied upon application.

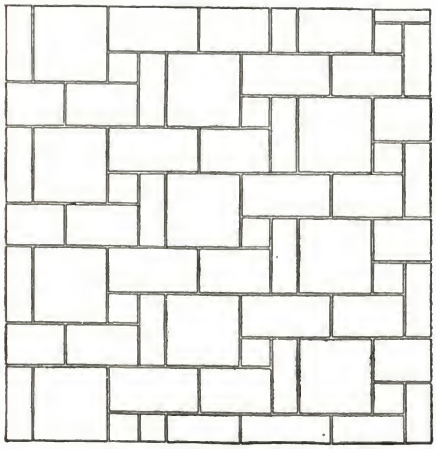
Accepted as Standard by Prominent Users—Subsequently to the standardizing on the AMBLUCO Blue Stone Treads by the City of Boston and its many suburbs in their schools and other public buildings, nearly all the rest of New England, recognizing the superior features of these treads, did likewise. Many of the leading school architects in the Eastern, Southern and Middle Western States specify them. The use has not been confined to schools, but has also been extended to other public buildings, such as hospitals, museums, colleges, churches, clubs, railroad stations and high class commercial buildings.

Also AMBLUCO installations are constantly being made to replace worn-out treads of other kinds.

AMBLUCO Treads and Landings are used, for the most part, by architects and engineers long accustomed to incorporating in their specifications the best material for their work.

A Few Ambluco Tread and Landing Installations

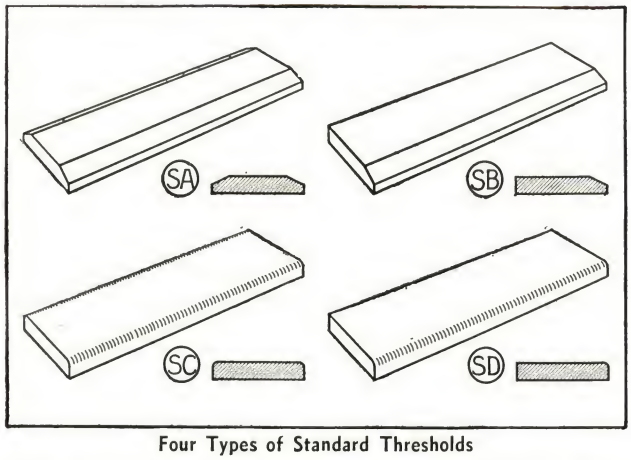
Girls' Continuation School, Boston, Mass., Joseph J. Driscoll, Architect
Essex County Sanitarium Buildings, Verona, N. J., Sutton & Sutton, Architects
Taft Upper School, Watertown, Conn., James G. Rogers, Architect
New York State Teachers' College, Buffalo, N. Y., William E. Haugaard, Architect
Legal Research Building, University of Michigan, Ann Arbor, Mich., York & Sawyer, Architects
St. Joseph's Normal Institute, Barrytown, N. Y., James W. O'Connor, Architect
Brookline High School, Boston, Mass., Kilham, Hopkins & Greeley, Architects
Columbia High School, South Orange, N. J., Guilbert & Betelle, Architects
St. Boniface R. C. School, Sea Cliff, L. I., N. Y., Jas. W. O'Connor, Architect
Homeopathic Hospital, Providence R. I., Kendall Taylor & Co., Architects
Lehigh Valley Railroad Station, Easton, Pa., J. J. McCleece, Architect
Federal Reserve Bank, Boston, Mass., R. Clipston Sturgis, Architect
Liberty Telephone Exchange, Boston, Mass., Parker, Thomas & Rice, Architects



Semi-irregular Flooring Design—FC
Five different size blue stone slabs laid to a pattern with broken ¼-in. joints

Ambluco Blue Stone Flooring, Thresholds and Wall Base

In these days of the exacting of high liability for accidents to mankind, the fundamental requirement in flooring is that it does not become slippery under any conditions. In this blue stone flooring, quartz, the essential constituent, being harder than the accessory minerals, is pre-eminent on the wearing surface at all times and makes the floor slip-proof and very durable. Besides the rust-proof, non-porous, dustless and sanitary qualifications of this flooring, it is quiet to walk on.



Four Types of Standard Thresholds

AMBLUCO Flooring is between 1¼ and 2 in. thick and is especially suitable for interior floors in both regular and irregular designs, a suggestion of which is shown below.

Ambluco Flooring, Base, Treads and Risers, Alumnae Hall, Vassar College, Poughkeepsie, N. Y.
HUNT and HUNT, Architects

Joints of ⅛ to ¼ in. are usually used for the regular styles and ½-in. joints are more in keeping for the irregular style floors.

Its sawed or rubbed finish gives a level surface on which chairs and other furniture do not rock, a feature so annoying with natural split stone.

Other delightfully artistic effects are gained by several methods. One, by varying the finishes—having some pieces sawed with sand and some with steel shot. Another, by omitting the washing of the stone after sawing, which gives a variegated coloring from the rust stain of the saws.

AMBLUCO Flooring is especially appropriate for, and is being used extensively in churches, cathedrals, museums, libraries, clubs, hotels, railroad stations, residences, high class commercial buildings, and the vestibules and stair halls of hospitals, schools and college buildings.

Perhaps in no place is there greater and more noticeable wear than in interior thresholds or saddles, and therefore, for this purpose, this AMBLUCO non-slip sand rubbed product is unapproached. These are furnished 1¼ to 2 in. thick by the desired widths, and with a choice of bevels.

The AMBLUCO Wall Base and Plinths should be used to match the flooring and thresholds, landings and treads. A fine sand rubbed finish is most appropriate, although the sand sawed finish frequently harmonizes better with certain styles of wall.

Typical Ambluco Flooring, Base and Threshold Installations

Museum of Fine Arts, Boston, Mass., Guy Lowell, Architect
Cathedral of Incarnation, Baltimore, Md., Bertram G. Goodhue, Architect
Christ Church, Bronxville, N. Y., Bertram Goodhue, Associates, Architects
University of Maine Arts & Science Building, Orono, Me., Crowell & Lancaster, Architects
Baker Chocolate Co., Dorchester, Mass.
Carl Weeks Residence, Des Moines, Iowa, Rasmussen & Wayland, Architects
Pilgrim State Hospital, Pine Aire, L. I., N. Y., Wm. E. Haugaard, Architect

Suggestions for Care of Ambluco Products

After AMBLUCO Treads, Landings, Flooring, etc., have been installed they should be thoroughly scrubbed with sand and water until clean. No acid or other damaging substances should be used. These treads should be thoroughly swept as often as the corridor and hall floors. They gradually become darker from the usual soiling, but if a darker shade is preferred at installation, scrub and then paint with raw linseed oil. This can be done as often as will give the best results.

AMERICAN ABRASIVE METALS CO.

IRVINGTON, NEW JERSEY

50 Church Street, NEW YORK, N. Y.

BOSTON, MASS.
CHICAGO, ILL.

PITTSBURGH, PA.
PHILADELPHIA, PA.

LOS ANGELES, CALIF.
SAN FRANCISCO, CALIF.

FERALUN SAFETY TREADS

Bronzalun **Alumalun** **Nicalun**

PURPOSE

Feralun is a safety tread which prevents slipping on stairs and other walkway surfaces. More people are protected by Feralun than by all other types or makes of safety treads combined.

DESCRIPTION

Feralun consists of a special metal casting in the walking surface of which is uniformly embedded a *slip-preventing* and *wear-resisting* abrasive material. The abrasive material slightly projects above the wearing surface, including the nosing of the stair tread, the point of greatest wear. A firm grip is thus assured to the foot whether the surface is wet, oily or dry.

Three surfaces are furnished—*hatched, plain* or *fluted* as illustrated. Since the non-slip properties, however, are due entirely to the abrasive material, one surface is as efficient as another.

Depending on the architectural effect desired, three metal bases other than Feralun are manufactured.

Bronzalun—a bronze base, Alumalun—an aluminum base, and Nicalun—a nickel bronze base. In every feature, except the metal, they are exactly like Feralun.

ECONOMY OF USE

Because of long wear no repairs are ever required under normal wearing conditions. Because Feralun eliminates accidents, damage suits are avoided and compensation rates are reduced.

USES

1. Concrete Stairs—See page 4, Plates 1 and 2.
2. Structural Stairs—See page 4, Plates 3, 4 and 5.
3. Door Thresholds—See page 6, Plates 9 and 10.
4. Floor Plates—See page 6, Plate 11.
5. Spiral Stairs—See page 5, Plate 6.
6. Elevator Sills—See page 5, Plates 7 and 8.
7. Repairs—See page 6, plate 12 and page 7.
8. And generally wherever slipping hazards are present.

SPECIFICATIONS

See page 7.

SERVICE

An engineering organization is maintained to answer problems in stairway and floor plate design. Inquiries will be gladly answered and given careful consideration.

WIDE ACCEPTANCE

These products are generally recognized as the standard Safety Tread, proven by over 10,000,000 square feet of material installed over a period of twenty-five years.

Among the many distinguished architects and engineers who specify Feralun, Bronzalun, Alumalun and Nicalun, may be mentioned—

Arthur Brown.....San Francisco, Calif.
Paul Cret.....Philadelphia, Pa.
Holabird & Root.....Chicago, Ill.
Albert Kahn.....Detroit, Mich.
Mark Lemmon.....Dallas, Tex.
McKim, Mead & White.....New York, N. Y.
James Gamble Rogers.....New York, N. Y.
Stone & Webster.....Boston, Mass.

Among Prominent Installations and Users

Empire State Building
Radio City
Cincinnati Union Terminal
General Motors Co.
The Chicago Tribune
E. I. Du Pont de Nemours & Co., Inc.
Eastman Kodak Co.
The Archives Building, Washington, D. C.
The Department of Commerce Building, Washington, D. C.
The Ford Motor Company
Los Angeles County Hospital
United States Navy
United States Army
Sears, Roebuck & Co.
The New York Times

FACTS ABOUT FERALUN

Insurance and Casualty Companies recommend and approve Feralun, Bronzalun, Alumalun and Nicalun.

During a test period there were 141 accidents on a stairway in a prominent railway terminal. Feralun Treads were then installed and a check taken after a similar period of time elapsed showed no accidents had occurred. This is a clear demonstration of the value of Feralun. The stair in question was properly designed and well lighted, and no change was made other than a Feralun installation.

The U. S. Army Engineers found Feralun the effective material for reducing slipping on oily floors.

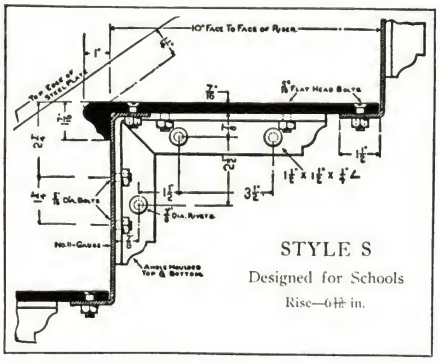
Feralun serves the New York Subways, the Chicago Elevated and the Boston Elevated.

Compensation rates are reduced by the use of Feralun, Bronzalun, Alumalun and Nicalun. Twenty-two chain store organizations specify these products as a protection against slipping on stairs and door thresholds.

Feralun, Bronzalun, Alumalun and Nicalun are produced in the largest plant in the world devoted exclusively to the manufacture of abrasive metals. The originators of Feralun have had twenty-five years of experience, a record unsurpassed in its field. There is no guesswork about Feralun, no unproven statements. Feralun has stood the test of time and is a standard by which other treads are judged. Owning and operating our own plant assures accuracy and uniformity of our products.

Feralun Abrasive Grains—For surfacing new concrete, terrazzo, and composition flooring, to retard slipping and to add longer life. Write for details.

FERALUN FOR SCHOOLS



Stairs in schools are in more constant use than in most public buildings. When made of ordinary materials these stairs will wear down, chip on the nosing edge, and become smoother and more slippery the longer they are used. Feralun is proof against all these defects and when once installed will last the life of the building and will be slip-proof.

Feralun Anti-slip Treads were installed in Washington Irving High School, New York, N. Y., in 1913. To date, no accident has been reported and no repairs necessary. The Feralun qualities of safety and durability are easily proved. Inspection of these treads is invited.

FERALUN SPIRAL STAIRS

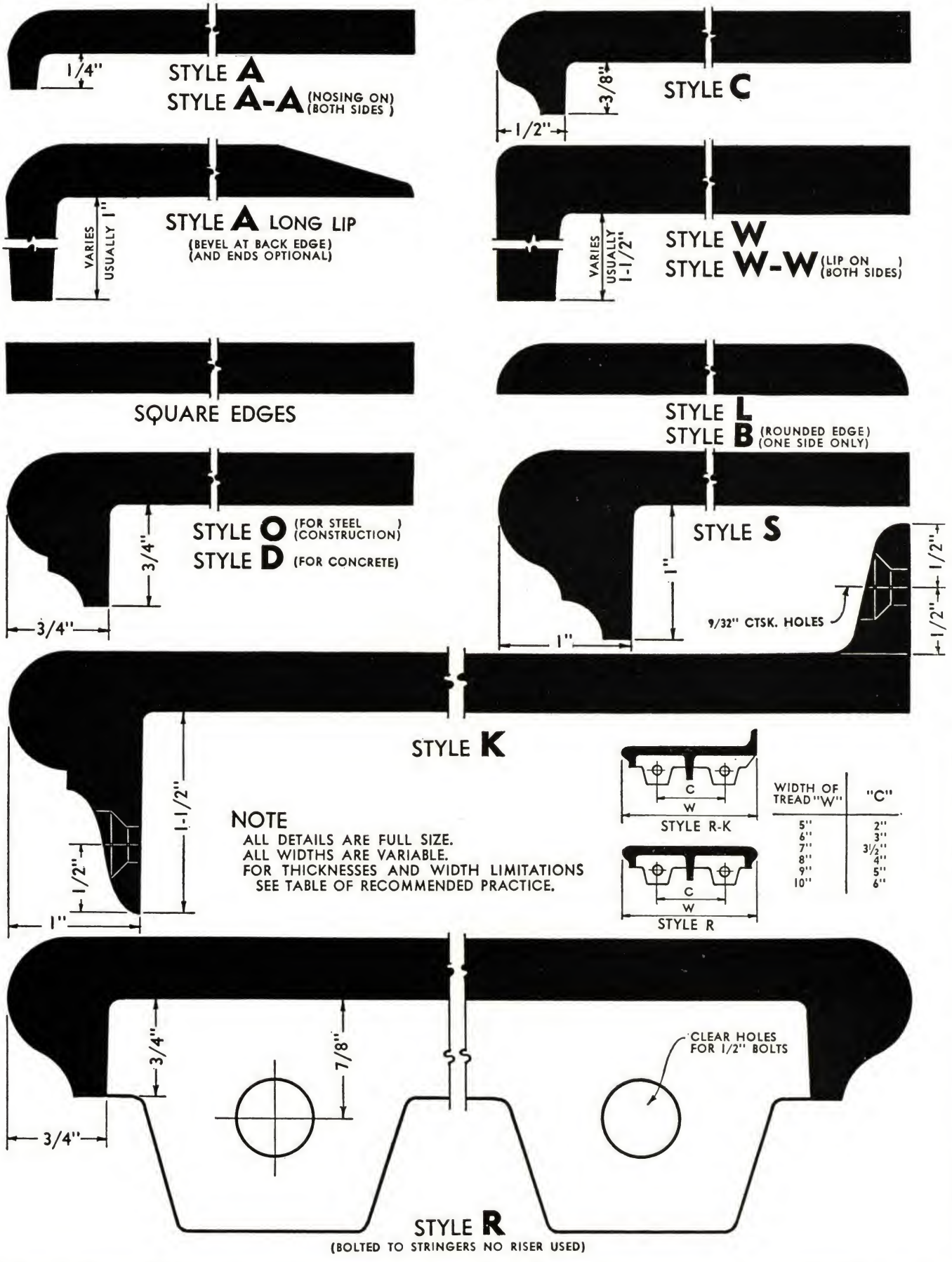
Feralun Spiral Treads and Platforms are cast complete in one piece with collar and flange or riser. Hole in collar is made for a 3½ or 4 in. o.d. pipe. The length of treads vary from 22 to 48 in.

Riser of each tread rests on tread of step below; from 12 to 16 treads to the circle. Riser heights and number of treads to the circle are dependant upon height between floors. In order that sufficient headroom be provided under top platform, risers should have a minimum height of 8 in. Hand rail spindles and center pipe furnished by others.

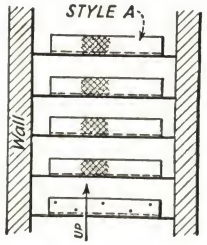
Spiral Staircase with Feralun Treads

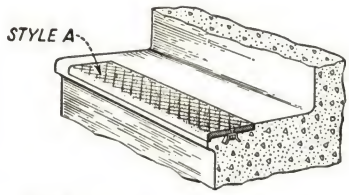
FERALUN BRONZALUN ALUMALUN NICALUN

ANTI-SLIP ABRASIVE METALS



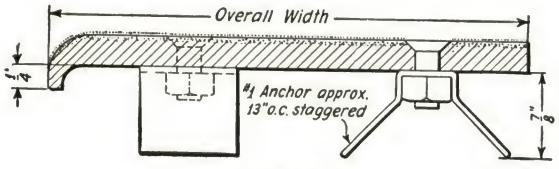
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS





STYLE A

treads are usually 6" or 8" shorter than distance between walls or stringers.



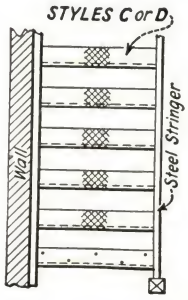
STYLE A

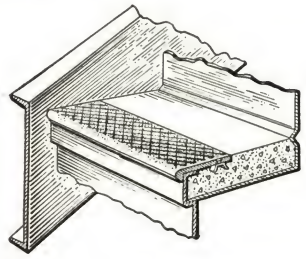
Recommended practice

Thickness	Feralun	Bronzalun	Nicalun	Alumalun	Length
¼"	Not made	Up to 6" wide	Up to 6" wide	Up to 14" wide	Over 9'-6" made in sections, except when width exceeds 32", then length must not exceed 7'-6".
5/16"	Up to 6" wide	" " 12" "	" " 12" "	" " 30" "	
⅜"	" " 12" "	" " 18" "	" " 15" "	" " 36" "	
7/16"	" " 24" "	" " 24" "	" " 18" "	" " 40" "	
½"	" " 32" "	" " 30" "	" " 24" "	" " 44" "	
5/8"	" " 44" "	" " 44" "	" " 30" "	" " 44" "	
¾"	" " 44" "	" " 44" "	" " 36" "	" " 44" "	

Treads for Concrete PLATE 1

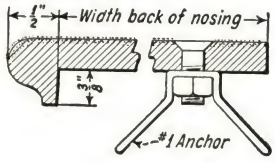
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



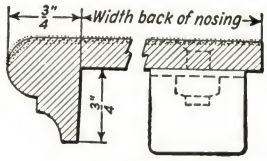


STYLES C & D

extend from stringer to stringer



STYLE C



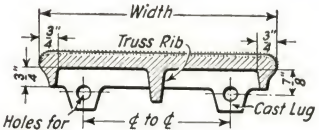
STYLE D

Recommended practice

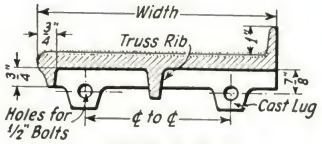
Thickness	Feralun	Bronzalun	Nicalun	Alumalun	Length
¼"	Not made	Up to 6" wide	Up to 6" wide	Up to 14" wide	Over 9'-6" made in sections, except when width exceeds 32", then length must not exceed 7'-6".
5/16"	Up to 6" wide	" " 12" "	" " 12" "	" " 30" "	
⅜"	" " 12" "	" " 18" "	" " 15" "	" " 36" "	
7/16"	" " 24" "	" " 24" "	" " 18" "	" " 40" "	
½"	" " 32" "	" " 30" "	" " 24" "	" " 44" "	
5/8"	" " 44" "	" " 44" "	" " 30" "	" " 44" "	
¾"	" " 44" "	" " 44" "	" " 36" "	" " 44" "	

Treads for Pan-Filled Construction PLATE 2

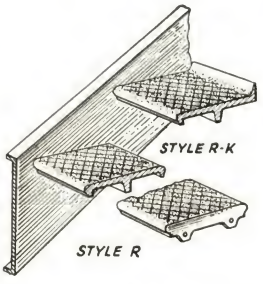
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



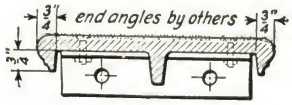
STYLE R



STYLE R-K



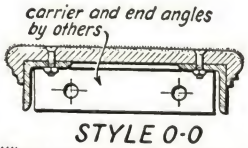
STYLES R & R-K
with cast lugs for bolting treads direct to stringers.



STYLE O-O

Recommended practice
STYLES R, R-K & O-O

Thickness
Not over 42" long--- 7/16"
" " 57" " --- ½"
For extra heavy loads submit inquiry.



STYLE O-O

When supported by longitudinal carrier angles Style O-O may be ⅜"

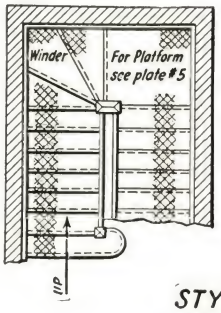
Hole Spacing R & R-K

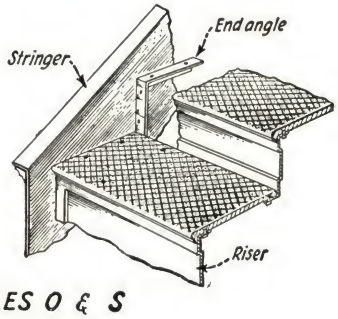
Width	5"	6"	7"	8"	9"	10"
℄ to ℄	2"	3"	3½"	4"	5"	6"

Above styles also made with perforations for drainage. For details see plate #11 or submit inquiry.

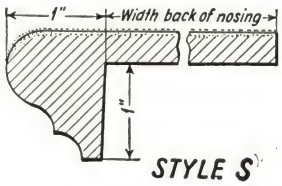
Structural Treads *(no risers required)* PLATE 3

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS

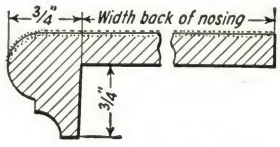




STYLES O & S
with bent risers



STYLE S



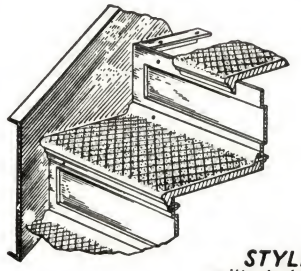
STYLE O

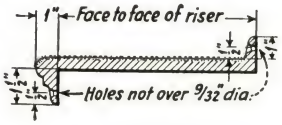
Recommended practice for Feralun

Thickness		Length
Up to 12" wide	⅜"	Up to 9'-6" in one piece.
" " 24" "	7/16"	" " " " " "
" " 32" "	½"	" " " " " "
When over ½" thick see plate #1		

Structural Treads *(risers required)* PLATE 4

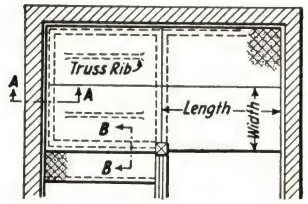
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



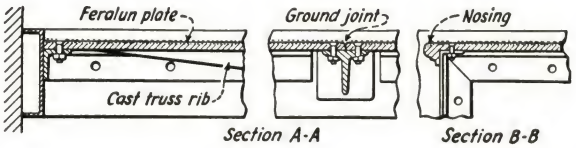


Note:
Thicknesses as on plate #4

STYLE K
with straight risers



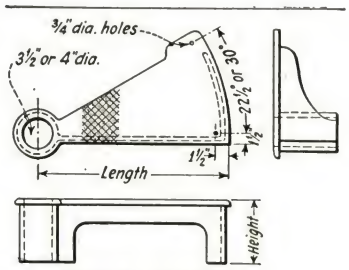
Recommended practice
Up to 32" wide ½" thick
" " 44" " 5/8" "
Plates not to exceed 44"x80" (See Plate 1.) For extra heavy loads submit inquiry



PLATFORMS

Structural Treads (risers required) - **Platforms** PLATE 5

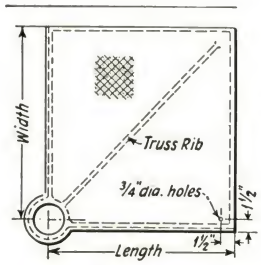
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



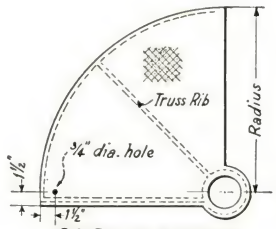
SPIRAL TREAD

Stock left and right patterns 12 and 16 to a circle in the following lengths:
24", 27", 30", 33", 36"

Minimum height 8¼" to allow sufficient headroom.



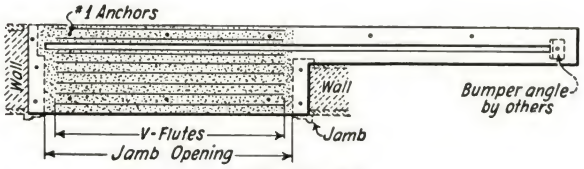
SPIRAL PLATFORM
SQUARE



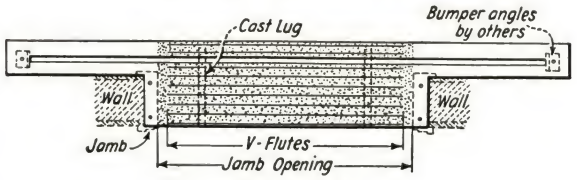
SPIRAL PLATFORM
CIRCULAR

Spiral Treads PLATE 6

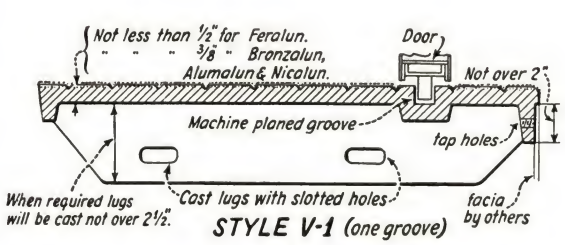
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



STYLE V-1
for single speed type elevator enclosure



STYLE V-1
for biparting type elevator enclosure

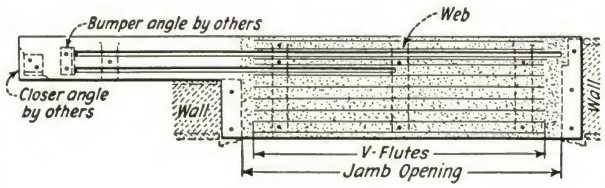


STYLE V-1 (one groove)

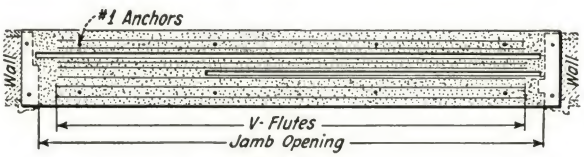
Sills over 9'-6" made in sections

Elevator Door Sills PLATE 7

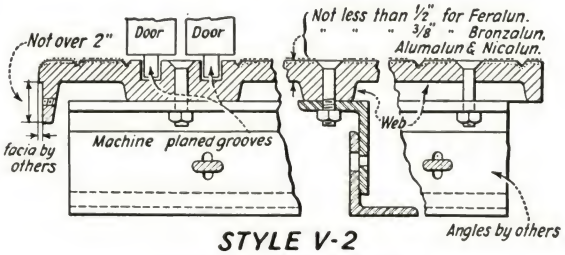
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



STYLE V-2
for two speed type elevator enclosures



STYLE V-2
for two speed and swing type elevator enclosures

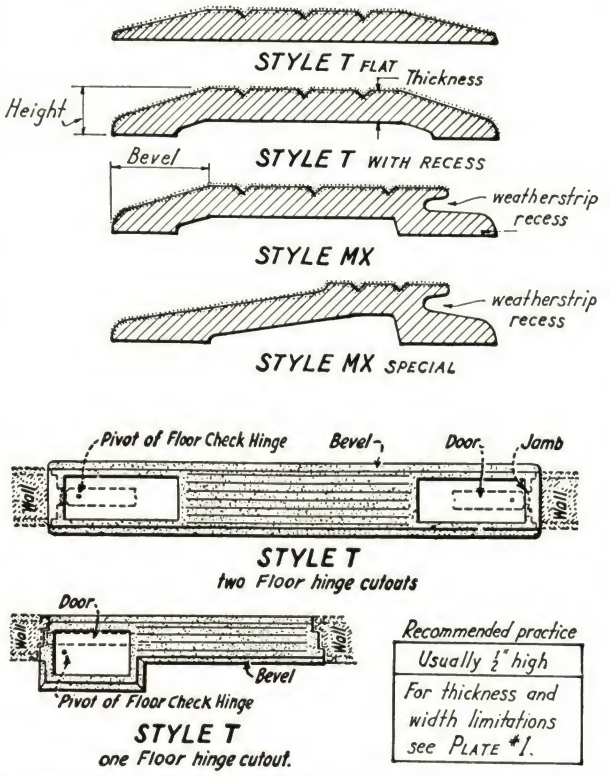


STYLE V-2

Sills over 9'-6" made in sections.

Elevator Door Sills PLATE 8

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS

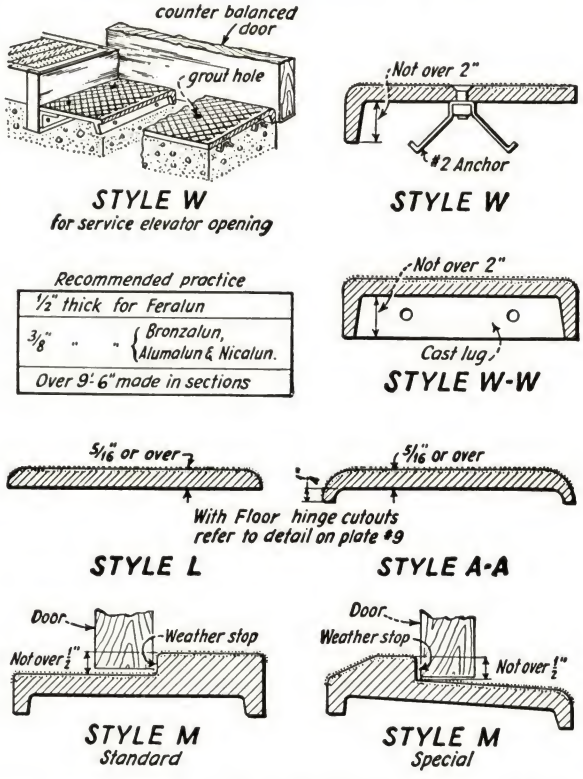


Recommended practice

Usually ½" high
For thickness and width limitations see PLATE #1.

Door Saddles PLATE 9

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS

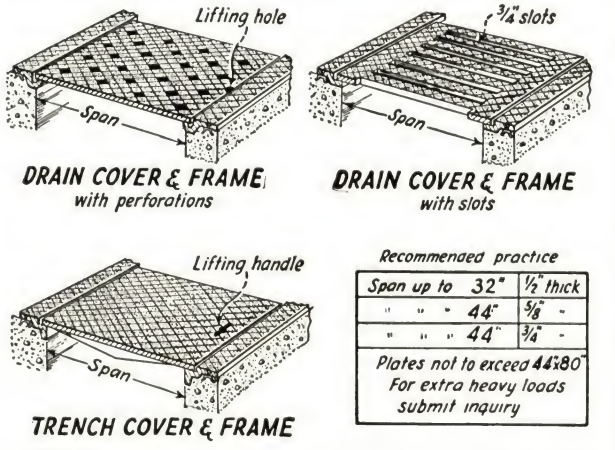


Recommended practice

½" thick for Feralun	
⅜" " "	Bronzalun, Alumalun & Nicalun.
Over 9'-6" made in sections	

Door Saddles PLATE 10

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



Recommended practice

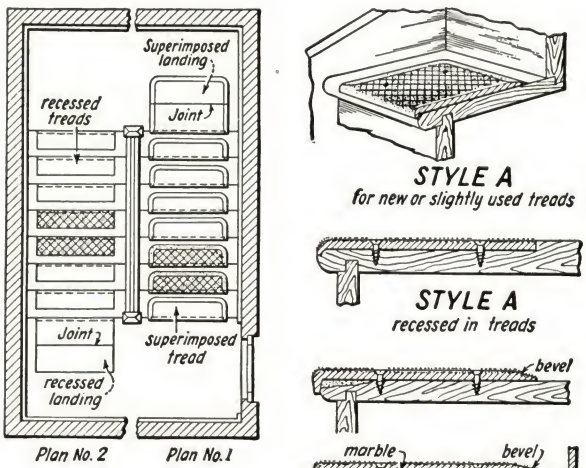
Span up to 32"	½" thick
" " " 44"	⅝" "
" " " 44"	¾" "
Plates not to exceed 44"x80" For extra heavy loads submit inquiry	

Recommended practice

½" thick up to 32"x 54"
⅝" " " " 44"x 60"
¾" " " " 44"x 80"
(See Plate 1.)

Floor Plates - Trench Covers PLATE 11

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



Notes:-

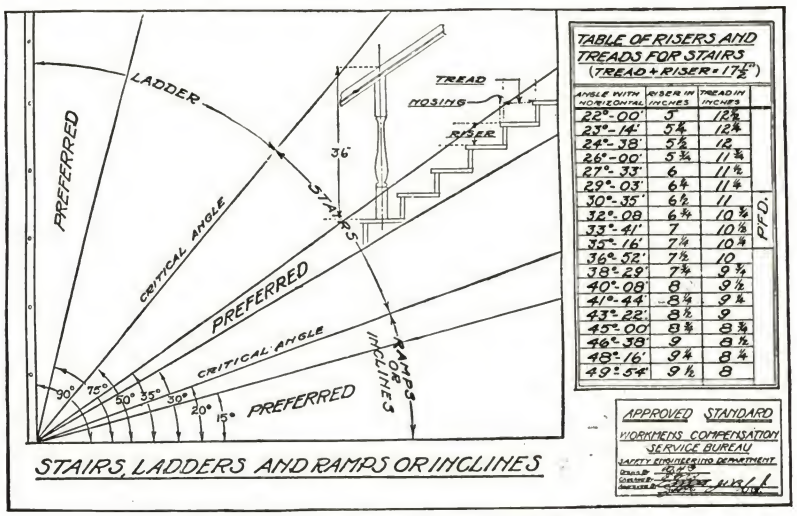
Plan No. 1 shows superimposed treads with back edge and ends bevelled.

Plan No. 2 shows recessed treads with back edge and ends squared.

Recommended Practice:-

Treads should extend to within 2½" of riser and stringers.

Treads for Repair Work PLATE 12



Correct Angles for Ladders, Stairs and Ramps

SPECIFICATIONS FOR ANTI-SLIP SAFETY TREADS

Safety Treads—All concrete and cement finished steps shall be provided with Feralun Anti-Slip Treads, Style (A, C or D) as made by the AMERICAN ABRASIVE METALS Co. Treads on cement finished steps, pan-filled type, shall be (4 or 6 in.) wide and shall extend the full length of the step. Style A treads on concrete steps shall be (4 or 6 in.) wide and extend to within (3 or 4 in.) of the stringers. Style (C or D) treads shall be (4, 4½, 6 or 7½ in.) wide and shall extend the full length of the step. The surface of the treads shall be kept free of cement.

Steel Stairs With Risers—Steel stairs with risers shall be equipped with Feralun Anti-Slip Treads, Style (O, S or K) as made by the AMERICAN ABRASIVE METALS Co. as shown on drawings. Platforms and landings shall be of Feralun of suitable thickness for span required, not less than $\frac{7}{16}$ in.

Steel Stairs Without Risers—Steel stairs without risers shall be equipped with Feralun Anti-Slip Treads as made by the AMERICAN ABRASIVE METALS Co. and be Style (R or K) with end lugs (6, 8, 9 or 10 in.) wide, bolted directly to the stringers, or Style 0-0 bolted to carrier angles attached to the stringers. (See plate 3 for required thickness.)

Spiral Stairs—Spiral treads and platforms shall be of Feralun as made by the AMERICAN ABRASIVE METALS Co. They shall be of stock pattern to suit conditions. (See Plate 6.)

Door Saddles—Exterior entrance, fire and roof doors shall be provided with saddles of (Feralun, Alumalun, Bronzalun, Nicalun) anti-slip material as made by the AMERICAN ABRASIVE METALS Co., Style (T, L or M). When required, saddles shall be cast to receive floor check hinges. Style M saddles shall be made with rebate to act as weather stop.

Interior doors shall be provided with (Feralun, Bronzalun, Alumalun, Nicalun) anti-slip saddles, Style (T, L or A-A) with (fluted, plain or hatched) surface. Saddles shall be full width of partition wall and shall extend the full width of door openings between jambs.

Elevator Door Sills—Passenger elevator door openings shall be provided with sills of (Feralun, Bronzalun, Nicalun) anti-slip material as made by the AMERICAN ABRASIVE METALS Co. Sills for sliding doors shall have machined grooves and machined recess for lip on the shaft side to receive facia plate. Sills for sliding doors shall be full width of wall thickness.

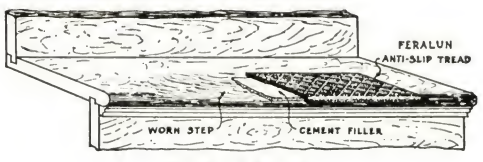
Freight elevator door openings shall be provided with sills of Feralun anti-slip material, Style W, with lip extending down the shaft side. They shall be full width of the wall thickness.

Floor Plates—Floor plates shall be of Feralun anti-slip material as made by the AMERICAN ABRASIVE METALS Co. Plates shall be cast with truss ribs and be of sufficient thickness to support a live load (state pounds) per square foot.

Trench Covers and Frames as indicated on the plans shall be made of Feralun anti-slip material of the dimensions and thicknesses shown on the detailed drawings.

FERALUN FOR REPAIR OF WORN STAIRS

Worn stairs of wood, terrazzo, marble, slate or other materials can be made safe and greatly improved in appearance by the use of appropriate abrasive metal castings, Feralun, Bronzalun, Alumalun or Nicalun, at a cost for installation that is surprisingly low.



Detail of Repair

Cast in any size or shape desired, treads for repair work are furnished with a deep lip to cover worn depressions and irregularities in old steps, and with beveled back and ends when the entire surface of existing tread is covered. When repair nosings are to be used in connection with linoleum, or when recesses are provided, the back and ends will be furnished square or slightly undercut. Necessary anchorage is obtained by wood screws or expansion bolts, depending upon the surface covered.

Quick-drying magnesite cement is recommended for use in leveling up worn steps. (See page 6, plate 12.)

AMERICAN MASON SAFETY TREAD CO.

GENERAL OFFICE AND FACTORY
LOWELL, MASS.

NEW ENGLAND SALES BRANCH—BOSTON, MASS.

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MONTREAL HALIFAX WINNIPEG OTTAWA TORONTO CALGARY VANCOUVER

At Left:
Steel Ribbed Tread Insert on New Terrazzo Steps

Above:
Brass Ribbed Treads Installed on Marble Stairs in Bank

At Right:
Mason Abrasive Iron Treads on Industrial Stairs

Typical Installations of Mason Safety Treads

On the stairs of the finest banks and office buildings; department and other stores; courthouses and public institutions; colleges, schools, hospitals, railroad stations, subways, powerhouses, factories, etc., Mason Safety Treads are used to prevent accidents

A TYPE OF MASON SAFETY TREAD FOR EVERY UNDERFOOT SAFETY SERVICE

PRODUCTS

Mason Safety Tread, Ribbed Type (Steel Base—Lead or Abrasive Filled).

Mason Safety Tread, Ribbed Type (Brass Base—Lead or Abrasive Filled).

Mason Safety Tread, Ribbed Type (Aluminum Base—Lead or Abrasive Filled).

Mason Abrasive Metal Safety Tread and Thresholds (Iron, Bronze, Aluminum or Nickel).

Mason Structural Safety Tread, Abrasive Filled (Iron or Bronze).

Mason Thresholds (Rolled Steel or Extruded Brass).

Mason Stair Nosings and Edgings (Extruded Brass or Aluminum).

Mason Non-slip Ladder Shoes.

Karbolith Sanitary Flooring.

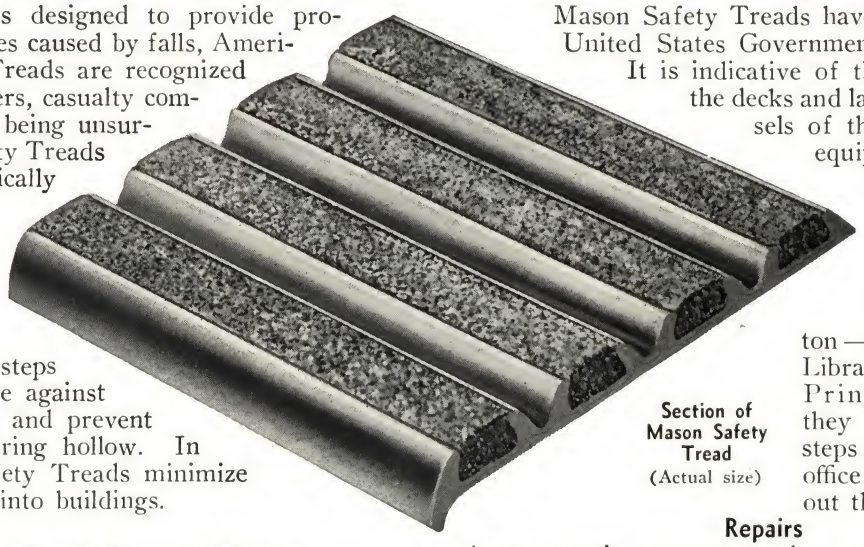
MASON SAFETY TREAD, Ribbed Type with Rolled Steel Base—Abrasive or Lead Filled

For Use Where Good Appearance in Addition to Safety Is Required

Preventing Accidents with Mason Safety Treads

Of all the devices designed to provide protection against injuries caused by falls, American Mason Safety Treads are recognized by architects, engineers, casualty companies and users as being unsurpassed. Mason Safety Treads provide what is practically positive immunity from slipping.

Mason Safety Treads insure greater durability for stairs of any type and on concrete steps they protect the edge against fracture or chipping and prevent the steps from wearing hollow. In addition, Mason Safety Treads minimize the tracking of dirt into buildings.



Section of Mason Safety Tread (Actual size)

In United States Government Buildings

Mason Safety Treads have been used by the United States Government for many years. It is indicative of their reliability that the decks and ladders of many vessels of the U. S. Navy are equipped with Mason Safety Treads and that they are in general use in the larger Governmental buildings in Washington — the Congressional Library, the Government Printing Office — and they are installed on steps of hundreds of post office buildings throughout the country.

Mason Safety Treads Prevent Litigation

Not only do Mason Safety Treads protect the pedestrian, they also protect the owner from accident litigation. It has been repeatedly recognized by judges and juries alike that if a person is injured by a fall on a stair thus equipped it is not the fault of the owner because adequate precaution had been taken to provide safe underfoot conditions.

Repairs

A worn stair, no matter what construction, may be readily renewed by the use of Mason Safety Tread.

Service and Co-operation

Any desired information regarding Mason Safety Treads will gladly be furnished and we will co-operate in the solution of any problem involving the installation of safety tread equipment.

STANDARD SECTIONS—FULL SIZE

Furnished cut to any length, drilled and countersunk. Anchors for concrete furnished when specified.

FIG. 1, Steel Base, 6 in Wide, 7 Ribs.

FIG 1A, Steel Base, 6 in Wide, 7 Ribs with Nosing.

FIG 2A, Steel Base, 4 in. Wide, 5 Ribs with Nosing.

FIG. 3, Steel Base, 4 in. Wide, 5 Ribs.

FIG. 3A. Steel Base 3¾ in. Wide, 4 Ribs.

FIG. 6, Steel Base 2½ in. Wide, 3 Ribs.

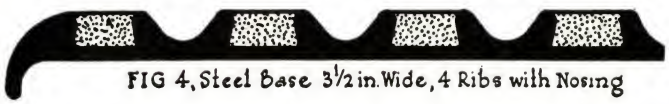


FIG 4, Steel Base 3½ in. Wide, 4 Ribs with Nosing

FIG. 5, Steel Base, 3 in. Wide, 3 Ribs, Nosing and Straight Back.

Base is rolled, unperforated steel with alternate U-shaped and dovetailed grooves filled with lead or abrasive

Fig. 5—Especially made for granolithic work or for use with cork backing

MASON SAFETY TREAD Ribbed Type with Extruded Hard Brass or Aluminum Base—Abrasive or Lead Filled

Furnished cut to any length, drilled and countersunk. Anchors for concrete when specified.

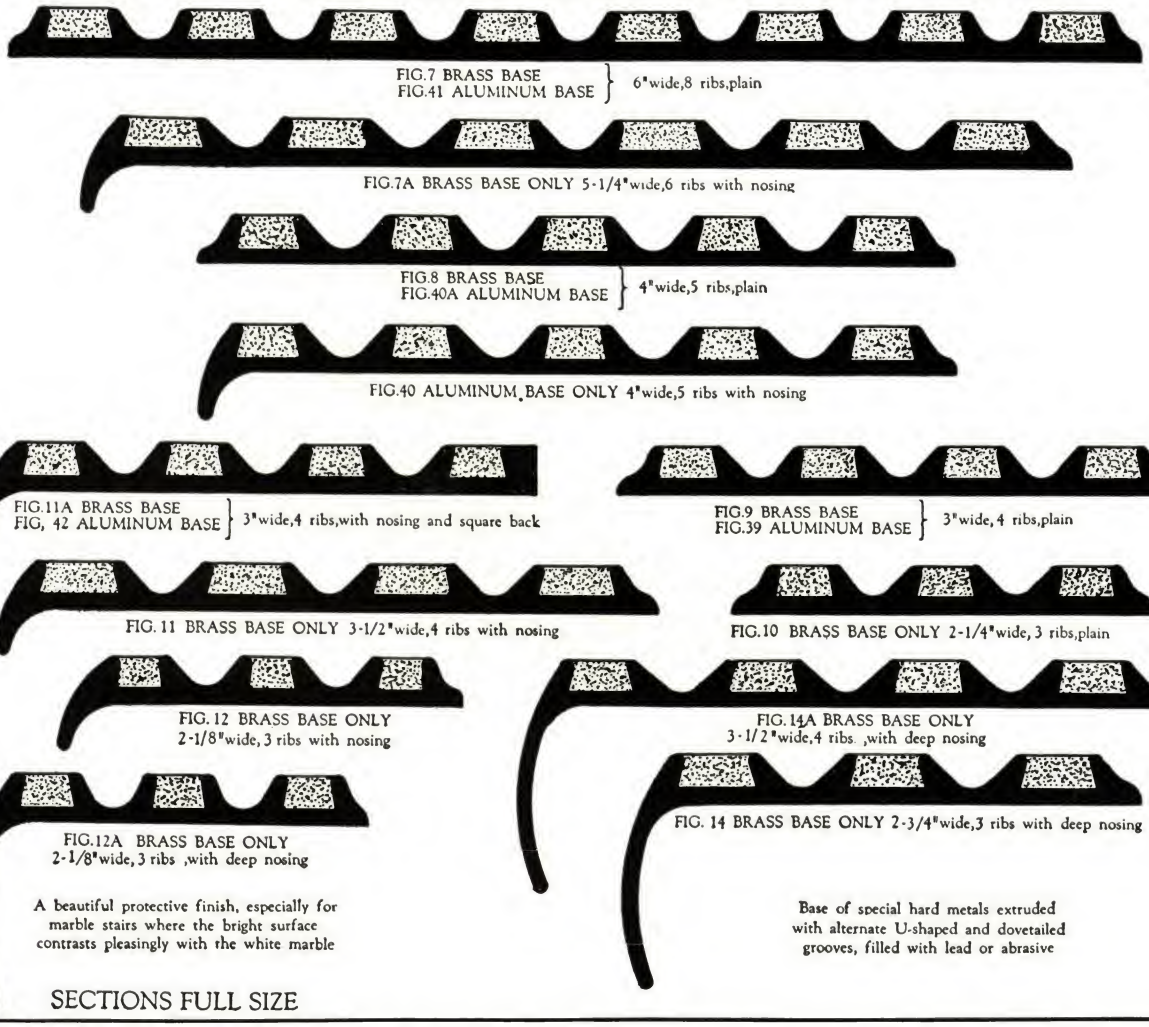


FIG.7 BRASS BASE
FIG.41 ALUMINUM BASE } 6"wide,8 ribs,plain

FIG.7A BRASS BASE ONLY 5-1/4"wide,6 ribs with nosing

FIG.8 BRASS BASE
FIG.40A ALUMINUM BASE } 4"wide,5 ribs,plain

FIG.40 ALUMINUM BASE ONLY 4"wide,5 ribs with nosing

FIG.11A BRASS BASE
FIG, 42 ALUMINUM BASE } 3"wide,4 ribs,with nosing and square back

FIG.9 BRASS BASE
FIG.39 ALUMINUM BASE } 3"wide,4 ribs,plain

FIG. 11 BRASS BASE ONLY 3-1/2"wide,4 ribs with nosing

FIG.10 BRASS BASE ONLY 2-1/4"wide, 3 ribs,plain

FIG. 12 BRASS BASE ONLY
2-1/8"wide, 3 ribs with nosing

FIG. 14A BRASS BASE ONLY
3-1/2"wide,4 ribs ,with deep nosing

FIG.12A BRASS BASE ONLY
2-1/8"wide, 3 ribs ,with deep nosing

FIG. 14 BRASS BASE ONLY 2-3/4"wide,3 ribs with deep nosing

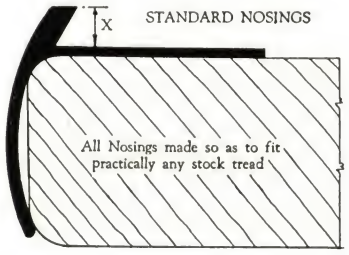
A beautiful protective finish, especially for marble stairs where the bright surface contrasts pleasingly with the white marble

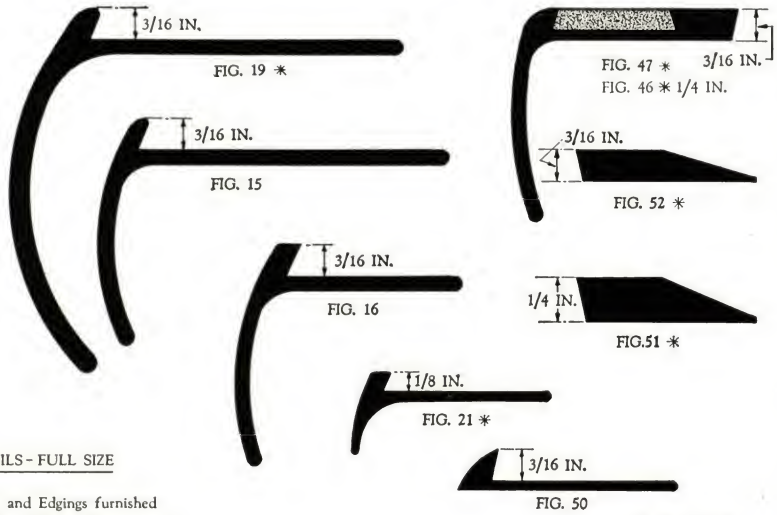
Base of special hard metals extruded with alternate U-shaped and dovetailed grooves, filled with lead or abrasive

SECTIONS FULL SIZE

MASON NOSINGS AND EDGINGS—Extruded Polished Brass or Aluminum

Stairs equipped with Mason Nosings in conjunction with linoleum or other floor covering present a handsome and easily maintained finish. The deep, sturdy lip is projected and undercut to receive and lock the floor covering. This also reinforces the front edge of the stair tread at the point where the wear is greatest. The substantial horizontal web insures permanent concealed fastening.





X Indicates the thickness of floor covering to be used with Fig. No,

X	FIGURE NUMBER
1/8 IN.	18-B
3/16 IN.	18-A
1/4 IN.	18
3/8 IN.	20

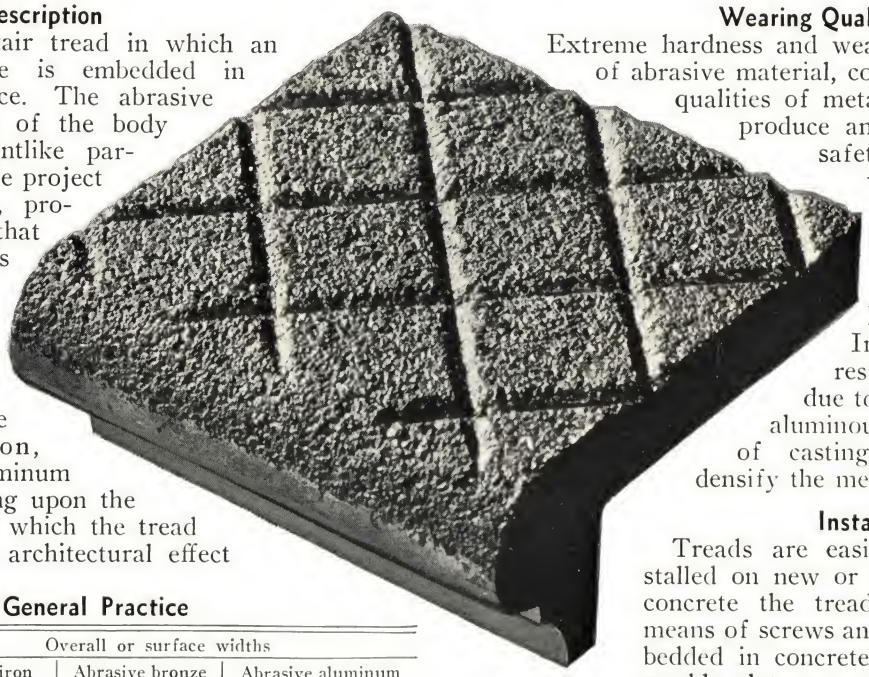
DETAILS - FULL SIZE

All Nosings and Edgings furnished cut to length, drilled and countersunk.

* Brass Only

AMERICAN MASON SAFETY TREAD CO.

MASON ABRASIVE IRON—MASON ABRASIVE BRONZE
MASON ABRASIVE ALUMINUM
MASON ABRASIVE NICKEL—SAFETY TREADS



Description

A cast safety stair tread in which an aluminous abrasive is embedded in the wearing surface. The abrasive is an integral part of the body metal and the flintlike particles of the abrasive project above the surface, producing a surface that effectively prevents slipping whether wet or dry.

Metals

These treads are furnished with the body metal of iron, brass, bronze, aluminum or nickel—depending upon the type of service for which the tread is required or the architectural effect desired.

Wearing Qualities

Extreme hardness and wear-resisting qualities of abrasive material, combined with similar qualities of metal body, combine to produce an extremely durable safety tread—one that will present an effective non-slip surface for a long period despite hard wear. The Mason Abrasive Iron possesses a high resistance to corrosion due to the addition of the aluminous abrasive at time of casting which tends to densify the metal.

Installation

Treads are easily and quickly installed on new or old work. On new concrete the treads are fastened by means of screws and metal anchors embedded in concrete. For old concrete, marble, slate, etc., the use of expansion bolts is recommended. Only wood screws are needed to hold treads securely in place on wood stairs.

General Practice

Minimum thickness of treads	Overall or surface widths		
	Abrasive iron	Abrasive bronze	Abrasive aluminum
¼ in.	Not made	Up to 4 in.	Up to 9 in.
5/16 in.	Up to 6 in.	Up to 9 in.	Up to 18 in.
⅜ in.	Up to 12 in.	Up to 15 in.	Up to 30 in.
7/16 in.	Up to 24 in.	Up to 24 in.	Up to 44 in.
½ in.	Up to 32 in.	Up to 30 in.	Up to 44 in.
⅝ in.	Up to 44 in.	Up to 44 in.	Up to 44 in.
¾ in.	Up to 44 in.	Up to 44 in.	Up to 44 in.

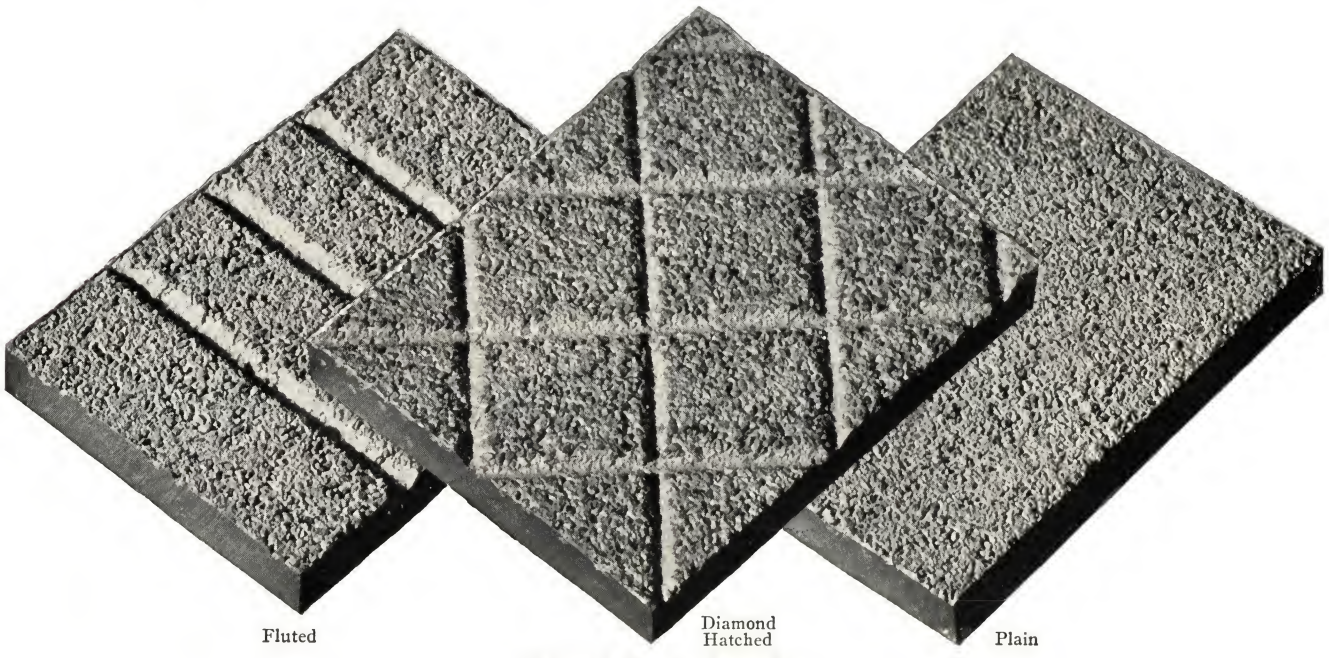
Lengths—Not over 9 ft. 6 in. long except when width exceeds 32 in., then length must not exceed 7 ft. 6 in.

Castings not conforming to above made in sections unless special arrangement is made.

Abrasive iron styles M, H, and G made 5/16 in. thick up to 6 ft. long; over 6 ft. long to 9 ft. 6 in. long made ⅜ in. thick; and styles V and J minimum thickness ⅜ in. regardless of width.

Surfaces

Treads are furnished in the three surfaces illustrated below, namely: Fluted, Diamond Hatched and Plain.

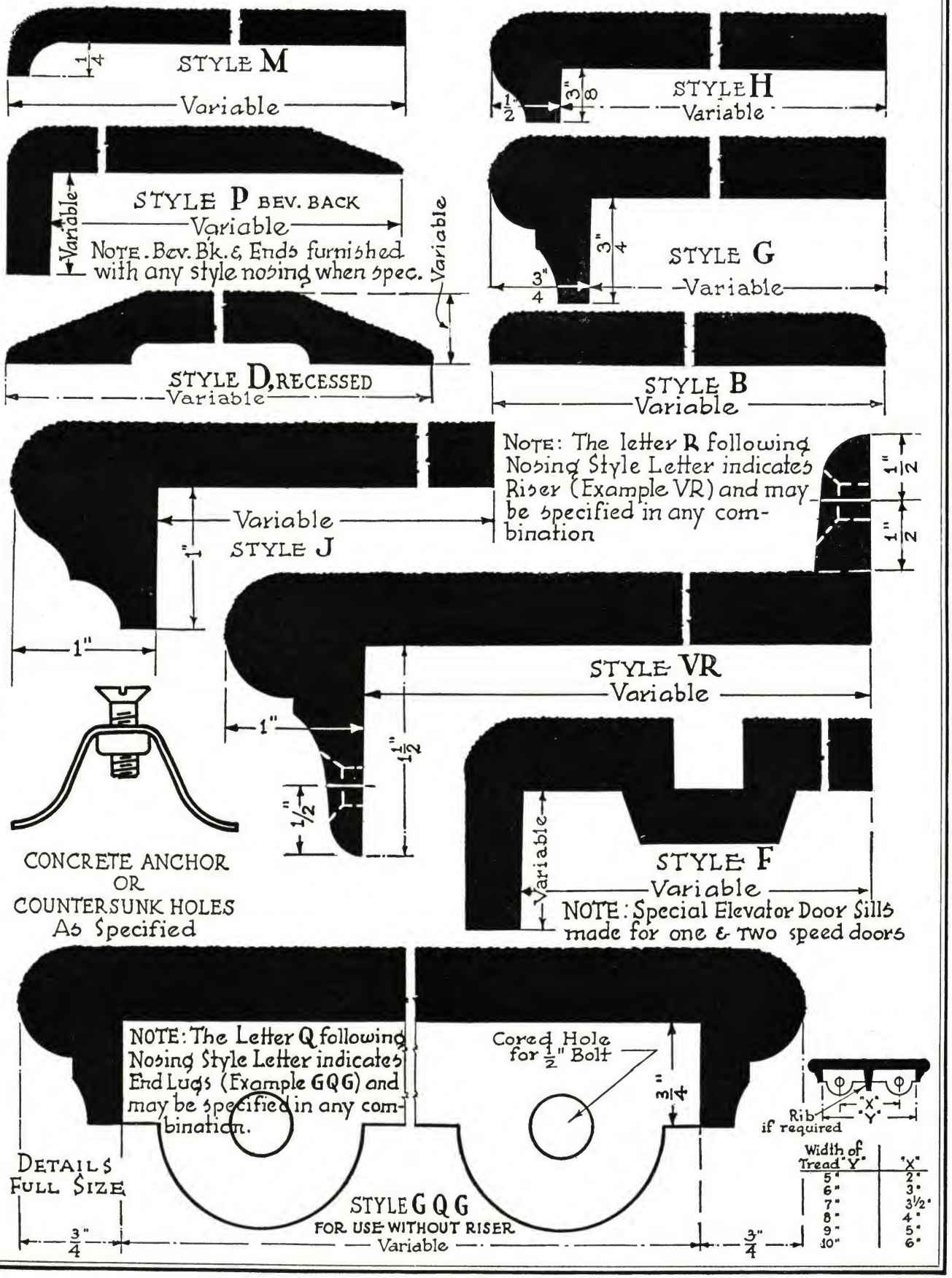


Fluted — Diamond Hatched — Plain

Various Surfaces in Actual Size

MASON ABRASIVE IRON, BRONZE, ALUMINUM, NICKEL, SAFETY TREADS

For Thickness of Treads, See General Practice (DETAILS FULL SIZE)



MASON STRUCTURAL ABRASIVE FILLED TREADS

Cast Iron or Cast Bronze with Abrasive Filling Extending Down ¼" Into the Base Metal

Plain Surface

A stair tread cast with one-quarter inch or more deep channels to receive Mason Safety Abrasive Filling. This filling especially prepared and treated, has proven for over twenty-five years its supremacy. In addition the dental (toothed) nosing reinforces and accentuates the front edge of each step, which is an extra wear-resisting quality and safety feature. As a whole this means that when the surface has worn off, instead of being useless as a Safety Tread, Mason Structural Abrasive Filled Tread has just started its life of extreme usefulness as a real Safety Tread. Mason Structural Abrasive Filled Treads save money for owners not only by protecting the public against accidents, but in length of efficient safety life.

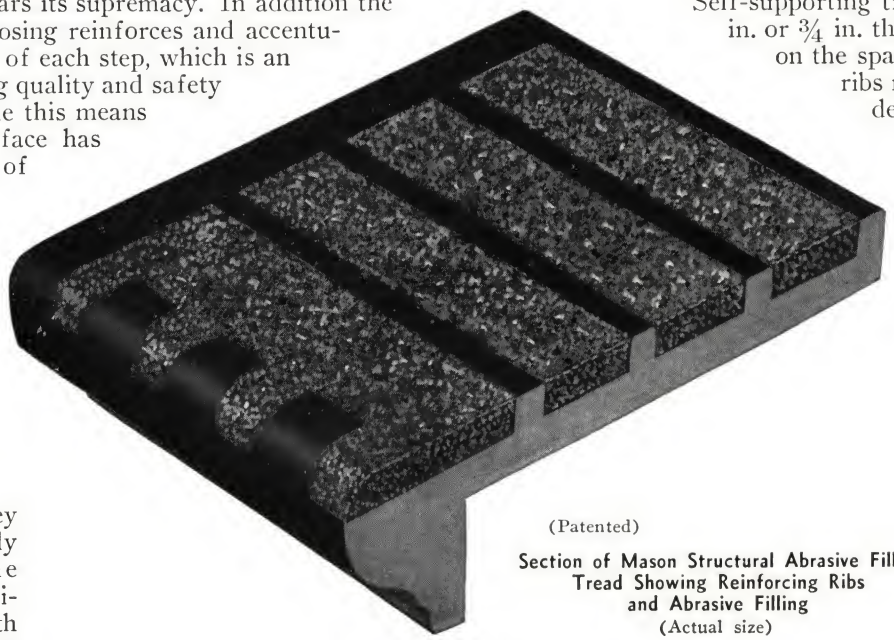
Widths and Lengths

Furnished in any tread width 3 in. and over, in lengths up to 90 in.

General Practice

Self-supporting treads are made ⅝ in. or ¾ in. thick, depending upon the span and load. Truss ribs may be cast on under-side of treads when required. Platforms can be supplied up to 6 ft. long and 6 ft. wide.

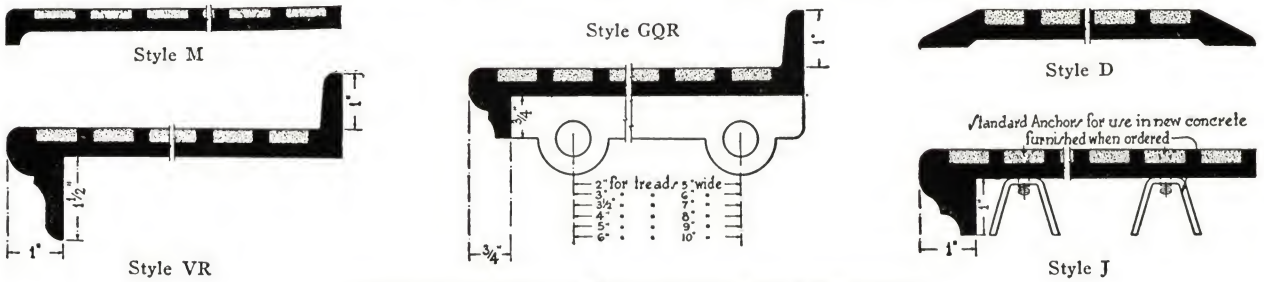
Where treads are to be set in concrete, anchors will be supplied when specified. Minimum thickness of tread, ½ in.



(Patented)

Section of Mason Structural Abrasive Filled Tread Showing Reinforcing Ribs and Abrasive Filling
(Actual size)

DETAILS OF MASON STRUCTURAL ABRASIVE FILLED TREADS

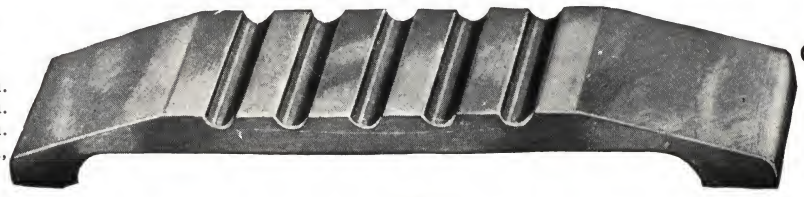


Nosings made similar to Mason Abrasive Metal Safety Treads

MASON DOOR THRESHOLDS

Brass—Corrugated Surface

Width 4 in.; height ½ in.
Width 5 in.; height ½ in.
Width 6 in.; height ½ in.
Furnished cut to length, drilled and countersunk



Rolled Steel Corrugated Surface Only

Width 4 in.; height ½ in.
Width 5⅜ in.; height ⅝ in.
Width 7 in.; height ⅝ in.
Furnished cut to length, drilled and countersunk.

SECTION 12

CONTINUED ⟶

DEL TURCO BROS., INC.

Contractors for Terrazzo and Mosaic

HARRISON, N. J.

NEW YORK OFFICE: 30 Church Street (Hudson Terminal Building)

NON-SLIP "INTEGRO" TREAD

Trade Mark Registered U. S. Patent Office

A New Departure in Safety Treads

The Del Turco Integro Tread is a reinforced precast terrazzo unit with inlaid alundum aggregate inserts which will provide the necessary foot friction under all wet or dry conditions and under all other requirements of use.

ADVANTAGES

Correct Non-slip Effect

The alundum aggregate inserts are made with an exactly predetermined degree of non-slip effect in exactly the proper location on tread and nosing. There can be no accidental defects in the mixture nor any variation in surface texture of the abrasive. The foot friction is positive under all wet or dry conditions and there is no corrugation or projection to catch and hold the foot or heel.

The Del Turco Integro Tread is a scientifically correct product.

Attractive Appearance

The Del Turco Integro Tread is architecturally appropriate in design and the materials used are naturally and harmoniously decorative. Appearance is not sacrificed for the sake of utility. Patterns of inlay and color effects may be varied. Color contrast may be suppressed or achieved at will.

Metal strips may be used to outline the alundum inlay where so desired.

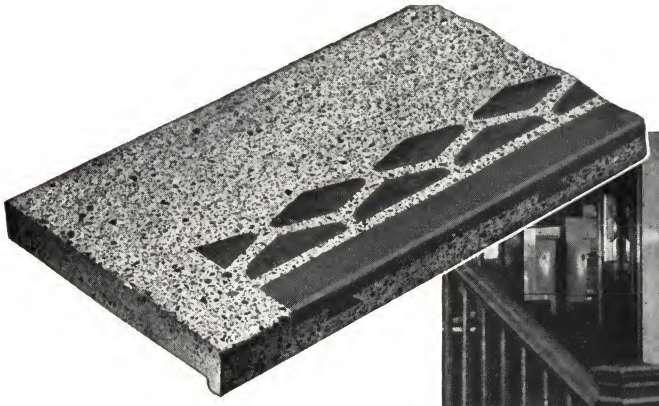
Moderate in Cost

The Del Turco Integro Tread, completely installed, will compete favorably in price with any other material, system or device which approaches it in quality or effectiveness.

It is a superior product of a quite "different" kind.

Broadly Adaptable

The Del Turco Integro Tread is suitable for use in all good construction and is particularly adaptable to



Below:

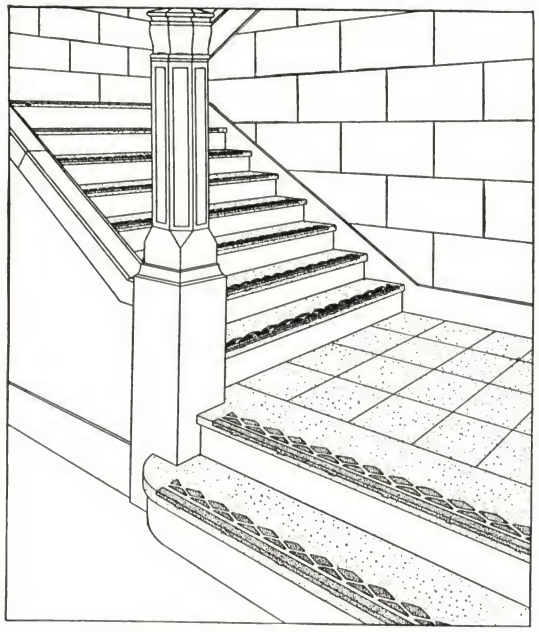
Stairs in The Public Service Building, Newark, N. J.

Permanently Durable

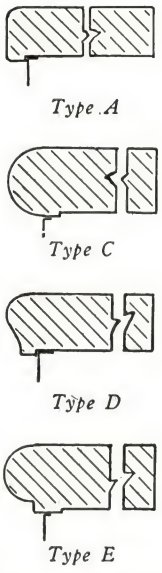
Alundum is one of the hardest of substances, and in the form used in Del Turco Integro Treads it will outlast the needs and requirements of normal use.

Permanently in Place

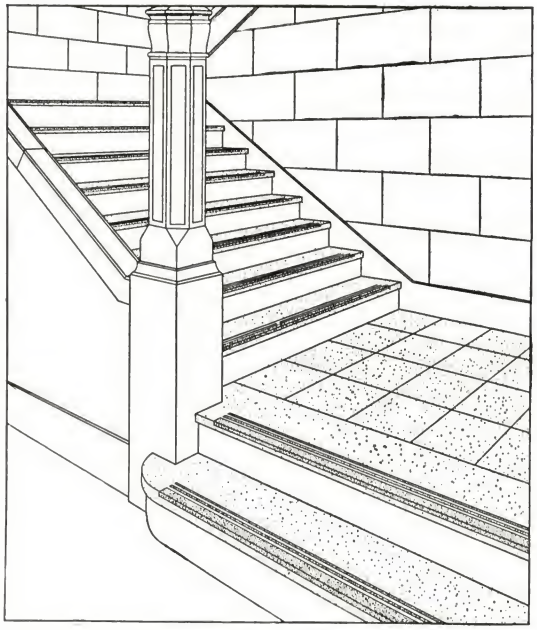
The name Integro is descriptive of the fact that the alundum inlay is an *integral part* of the terrazzo construction of the tread. It cannot become loose or detached.



Integro Tread, Diamond Pattern



Types of Nosings



Integro Tread, Line Pattern

INTEGRO

Trade Mark Reg. U. S. Pat. Off.

buildings of public use where utilitarian and artistic effects must be combined.

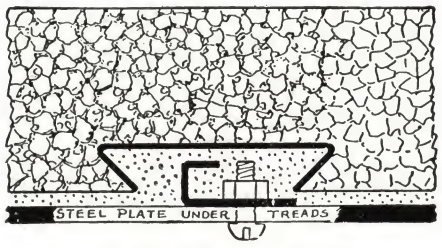
Cleanliness

Del Turco Integro Treads are easily cleaned. There are no grooves to hold dirt and where the design shows contrast in color the effect of soiling or discoloration is disguised.

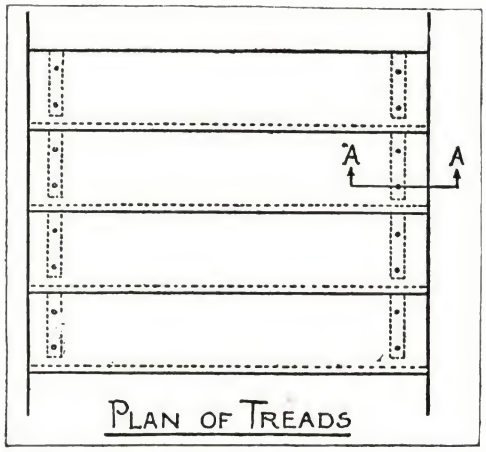
Manufacture and Distribution

The Del Turco Integro Tread is manufactured by the vibratory method in our plant, which is equipped with suitable machinery. It is properly reinforced, cured, finished and delivered to the building ready to be set in place. It is installed in cement mortar by marble setters in the same manner as marble.

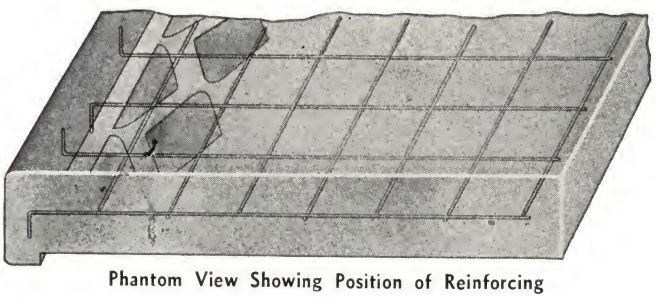
When installed over steel stairs, it should be secured to the sub-tread by means of our Dovetail Anchor method (shown at right) the dovetailed channel for which is provided in the manufactured tread.



Section Through "AA"



This method consists of placing a metal dovetail groove across the bottom of the tread at each end. Corresponding metal anchors are bolted to the steel sub-tread



Phantom View Showing Position of Reinforcing

Lengths

Del Turco Integro Treads are made in lengths up to about 8 ft. It is always made to order, it being impractical to carry it in stock.

When so desired treads and risers may be formed integrally.

We sell the Del Turco Integro Tread through marble contractors or we install it ourselves, when a marble contractor is not available.

Specifications

(Under Marble Work)

Furnish and set wherever shown on the drawings Del Turco Integro Non-slip Treads as made by Del Turco Bros., Inc., Harrison, N. J.

These treads shall be 1½ in. thick *(thicknesses recommended: Up to 4 ft. 0 in. long 1½ in. thick; from 4 ft. 0 in. to 6 ft. 0 in. long 1¾ in. thick; over 6 ft. 0 in. long 2 in. thick)* with nosing as detailed and of colors as approved later from samples to be submitted.

These treads shall be delivered at the building in a finished state. They shall be set in cement mortar and when they occur on steel stairs, they shall be secured to the sub-tread by the Dovetail Anchor method in accordance with the details of the manufacturer, who shall provide the anchors as required. Drilling of steel sub-treads will be done by others.

The treads shall be protected with boards and the entire work shall be delivered in perfect condition.

MEMORANDA

MARCROME ART MARBLE COMPANY

Manufacturers—Installers—Pre-cast Products Contractors

5300 McKissock Avenue, ST. LOUIS, MO. TELEPHONE, Colfax 6243

343 So. Dearborn Street, CHICAGO, ILL. TELEPHONE, Wabash 1881

KANSAS CITY, MO. DALLAS, TEX. DETROIT, MICH. HOUSTON, TEX. SAN ANTONIO, TEX.

Member of Cast Stone Institute

Products

MARCROME ART MARBLE
MARCROME NON-SLIP ART MARBLE
MARCROME PRE-CAST TERRAZZO
MARCROME PRE-CAST JOISTS
MARCROME PRE-CAST CONCRETE
MARCROME CAST STONE
MARCROME SWIM POOL UNITS

TRADE-MARK

Uses

MARCROME products are used in nearly all types of buildings, including residential, commercial, industrial, institutional, federal, state, municipal, church, school, hospitals and swimming pools, etc. Principal uses are floors, base, wainscot, partitions, shower pans, stairways, window stools, benches, fountains, swimming pool walls, gutters and other uses.

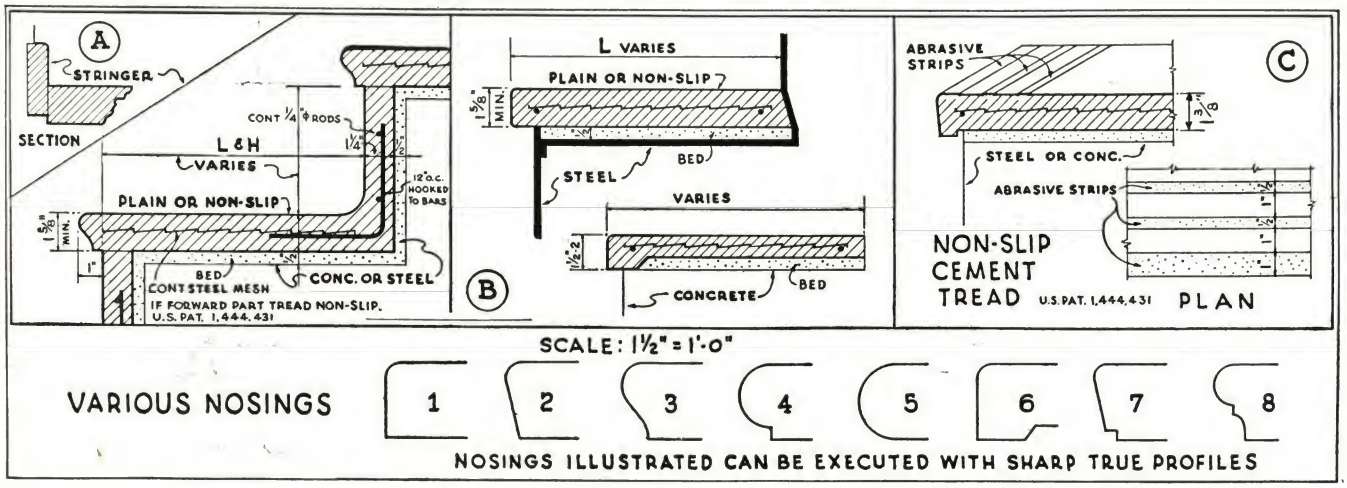
Company

MARCROME ART MARBLE COMPANY has had a background of over thirty years experience devoted exclusively to the manufacture of pre-cast products. It is an organization of a technical personnel trained to serve the building profession.

Facilities

Factory and branches are equipped to handle any type of work or any size order. Located for fast shipment to any part of the country. Various branches available for full co-operation.

DETAILS OF MARCROME STEPS AND TREADS



"A" shows MARCROME cove step with tread and riser, cast integral.
"B" illustrates MARCROME treads on steel or concrete sub-structure.
"C" shows MARCROME NON-SLIP tread for economy or industrial uses.

Description

MARCROME steps and stair treads and other products are scientifically reinforced and made by our own vibration and curing process.

Correct reinforcement, high early strength cement, steam curing, combined with raw materials of quality produce a product second to none in this field.

Non-Slip

MARCROME steps and treads are made in plain or Non-Slip finish. For the small additional cost we recommend using Non-Slip for both longer wear and protection against slipping hazards.

We are Norton Company licensee for use of their alundum aggregate in our Non-Slip art marble products. This abrasive comes in colors and when properly handled, such as in the case of our MARCROME products it is effective under wet or dry conditions.

Marcrome Service

Our several district offices assure you of complete technical co-operation for any problem in the pre-cast field. We can take care of your needs regardless of your location. We are both manufacturers and installation contractors.

Detail Sheets and Specifications

Our detail sheets and specifications are available on stairways shown above and on our other products.

Estimates and Suggestions

Quotations can be furnished promptly from any data submitted. We will also be glad to furnish suggestions and sketches without any obligation.

Prices available on materials or complete installations.

Patents

Our Non-Slip steps and treads are covered by U. S. Patent No. 1444431 in so far as applicable.

THE OHIO RUBBER COMPANY

Manufacturers of Orco Safety Treads and Flooring

WILLOUGHBY, OHIO

REPRESENTATIVES IN PRINCIPAL CITIES

THE COMPANY

THE OHIO RUBBER COMPANY, manufacturer of Orco Safety Treads and Flooring, has long been privileged to supply the automobile industry with an important part of its rubber products requirements.

The company was a pioneer in the development and application of processes for bonding rubber to metal. It manufactures approximately 160 separate and distinct rubber products for the motor industry.

More than half of the modern, rubber-on-steel automobile running boards used on present day cars are the product of THE OHIO RUBBER COMPANY.

ORCO SAFETY TREADS FOR SAFETY AND DURABILITY

Orco Safety Treads are made of a hard, tough, and somewhat flexible rubber base, which is reinforced with a ¼-in. galvanized wire mesh. Alundum aggregate (a ceramically bonded aluminum-oxide abrasive) the product of Norton Company, Worcester, Mass. is securely anchored into the wearing surface of the rubber.

The Orco type of safety treads and flooring is highly wear-resistant. They have proven their durability on installations for subway station stairs under the most adverse conditions. Rain, dirt, grit, and snow have not affected them. They have provided safe, sure footing for more than four million people without signs of wear and have lost none of their non-slip effectiveness.

7 Important Features of Orco Safety Treads and Flooring

(1) **Non-slip at the Nosing**—The Alundum aggregate in the rounded nosing functions throughout the step-cycle—gives maximum protection.

(2) **Permanently Non-slip**—They never wear smooth or slippery, require no maintenance, no servicing.

(3) **Non-slip When Wet**—Can be installed indoors or outdoors, since their slip-proof qualities are unaffected by moisture.

(4) **Nothing to Catch Heels**—No ridges, no grooves, no sharp corners exposed to mar their safe, trip-proof surface.

(5) **Extremely Long Life**—Made with Alundum aggregates securely moulded into a reinforced base of hard, tough rubber designed to outlast the stairs themselves.

(6) **Beauty and Color Harmony**—Genuinely good-looking in their own right, Orco Safety Treads are available in harmonizing colors.

(7) **Simple Installation**—Treads come in standard widths and standard lengths and are cut and drilled to specifications.

Standard Sizes

Widths: 3¾, 6⅛, 9⅛ and 12⅛ in.
Lengths: 66, 72 and 84 in.

Other Uses

Floors in front of machinery, ramp and elevator floors, loading platforms, floors and steps of street cars and buses; ships' ladders, and all other places where safe, sure footing is essential.

A Few Representative Users of Orco Treads and Flooring

Bethlehem Steel Company
Chevrolet Gear & Axle Company
General Electric Company
S. S. Kresge Company
Swift & Company
Sears, Roebuck and Company
Harvard University
General Motors Corporation
F. W. Woolworth Company
United States Veterans' Administration
Dodge Bros. Division, Chrysler Corp.
Boston Subway System
Yale University
Montgomery, Ward & Company

SUGGESTED SPECIFICATIONS FOR ORCO SAFETY TREADS

Private Work (Suggested Form)

Furnish and install, where shown on accompanying drawings, Orco Safety Treads and/or Orco Safety Flooring as manufactured by THE OHIO RUBBER COMPANY, Willoughby, Ohio. Material shall consist of a reinforced base of a hard, tough rubber into which Alundum Aggregates have been securely moulded. Treads and Flooring shall be cut to sizes required and shall be drilled at factory with holes countersunk to receive screws or bolts.

Color or colors of material shall be as selected from the manufacturer's standard colors. Installation shall be in accordance with manufacturer's installation methods. (See accompanying details.)

Public Work (Suggested Form)

All Safety Treads and Flooring shall consist of a reinforced base of hard, tough rubber into which abrasive aggregates have been securely moulded. The reinforcement shall be wire mesh embedded in the base and extending to all edges and into the nosings. The abrasive aggregates shall be well distributed throughout all top surfaces and nosings and shall be exposed to form a uniform non-slip wearing surface. The units shall have a minimum thickness of $\frac{1}{4}$ in. throughout all parts, except the lip of nosings, which shall be not less than $\frac{1}{8}$ in. thick. Units shall be cut to sizes required and shall be drilled and countersunk to receive screws or bolts.

Color or colors shall be as selected by the architect.

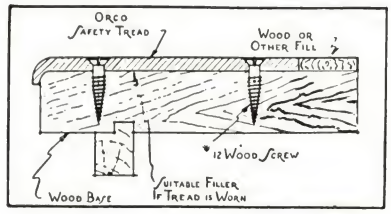
INSTALLATION METHODS FOR ORCO SAFETY TREADS

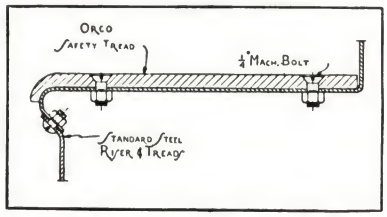
No. 1—New Work

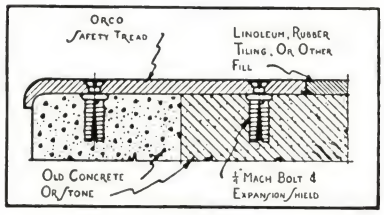
(a) Safety material occurring over wood construction shall be secured with No. 12 wood screws (mention whether steel, brass, or white metal) with heads countersunk flush with top of safety tread or flooring.

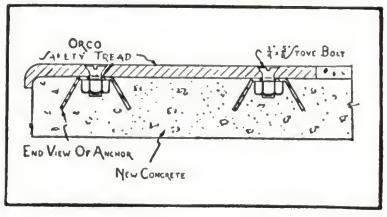
(b) Safety material occurring over steel stair construction or similar work having steel plates forming the base under the safety material shall be secured by means of machine bolts (mention whether steel, brass, or white metal) with heads countersunk flush with top of safety tread or flooring. The contractor will be required to drill all holes required in the steel work. *(In the event that the underside of the steel construction is inaccessible, an approved type of toggle bolt shall be used.)*

(c) Safety material occurring over concrete or cement work shall be secured by means of anchors bedded into the concrete or cement finish and fitted with stove bolts (mention whether steel, brass, or white metal) with heads countersunk flush with the top of the safety tread or flooring. *(In the event that the concrete or cement finish is already in place, this safety material should be secured in the same manner as hereinafter specified for installation on existing work.)*









(d) All safety material shall be installed with level and true surfaces, with joints butted tight and square. All units shall be fitted tight against adjoining materials where necessary. Where bedding is required to properly level up units, contractor shall furnish and install an approved mastic in a manner which will provide a complete and solid bed throughout areas which are to receive safety material.

No. 2—Existing Work

(a) Where present wood construction is to be covered with safety material, the contractor shall properly prepare the surface to form a level base. All worn parts shall be filled with plastic wood or mastic composition and brought to the general level of the adjoining parts. *(Installation of safety material shall be specified in the same manner as previously specified for new work.)*

(b) Where present steel stair construction or similar work is to be covered with safety material, subtreads should be made level and safety material applied as specified for new work.

(c) Where present surfaces, such as concrete, cement finish, terrazzo, marble, or hard tile, are to be covered with safety material, the contractor shall prepare surfaces to make a level base. Safety material shall then be secured by means of lead expansion shields let into the base material, and machine bolts (mention whether steel, brass, or white metal) with heads countersunk flush with top of safety material.

(d) Where new safety material is required to finish flush with adjoining floor or stair finish, or flush with adjoining coverings, specify that the contractor shall carefully cut present work to true and even lines, and shall form level beds to receive the safety material.

(e) General requirements of installation of safety material on present work shall be specified in the same manner as hereinbefore stated in Article 1, Paragraphs (c) and (d).

No. 3—Protection

In cases where installation of safety material is to be made prior to completion of rough work in the building or where considerable travel is likely to occur during construction, it is suggested that heavy paper or board coverings be used to protect the finished safety material until completion of the building. This may be made a part of the general contract or made part of the work of the contractor for safety material, as conditions require.

THE SAFE TREAD COMPANY, INC.

Iron, Bronze and Aluminum Abrasive Metal
for Structural and Industrial Purposes

TELEPHONE
BArclay 7-8885

30 Vesey Street, NEW YORK, N. Y.

BRANCH SALES OFFICES IN ALL PRINCIPAL CITIES

"SAFE TREAD" ABRASIVE METALS

Listed Under Re-Examination Service by Underwriters' Laboratories

THE SAFE TREAD COMPANY, INC., is headed by a past President of the American Society of Safety Engineers, who pioneered in the design and production of abrasive metal products for structural purposes, and who, for over 25 years, has been one of the leading figures in the nation-wide effort to overcome the serious hazards of unsafe walkways.

Associated with him are competent engineers, manufacturers, and sales representatives, specially trained in this particular field.

The facilities of one non-ferrous and three iron foundries and one of the leading abrasive grain manufacturers are utilized in the production of "Safe Tread" products, *under exclusive material, design and process patents and licenses.*

With a background of such sound experience, practical knowledge, and manufacturing facilities, "Safe Tread" products may be specified with full confidence that they will provide the best available enduring anti-slip walkway surface.

Scope of Use

"Safe Tread" Abrasive Metals are suitable for *inside* or *outside*—wherever slipping is to be prevented or excessive wear withstood, in either new or repair work. It has met the most exacting requirements and has been furnished for over 2,000 outstanding projects during the past five years; by direct purchase under the rigid inspection of the U. S. Navy; on contracts for public buildings, including postoffices, hospitals, schools, etc., and for private work including office buildings, stores, churches, dairies, packing houses, factories, railroads, subways, etc.

The "Safe Tread" Process

"Safe Tread" Abrasive Metal is made by a *patented process* which produces anti-slip treads having the diamond-hard abrasive:

(1) Deeply embedded in and firmly held by the metal *without an intervening film of foreign material* to weaken the grip of the metal on the abrasive. (When the abrasive grains are sprayed or coated with a foreign substance to prevent washing or floating as the molten metal enters the mold, the metal cannot make intimate contact with them—a condition that clearly affects the durability of the tread.)

(2) Projecting slightly to give a safe footing under all conditions. (Unless the grains project slightly above the metal to give the necessary "bite" the surface is no more anti-slip than metal without any abrasive); and

(3) Closely distributed in the surface so that the metal is protected from wear.

Specifying and Ordering

When specifying "Safe Tread" Abrasive Metals, the kind of metal, *surface design,* thickness and form desired should be indicated. When ordering or requesting estimates, complete information should be furnished. Detail drawings by the architect or shop drawings by the ornamental iron worker assure closer estimates and accurate filling of orders.

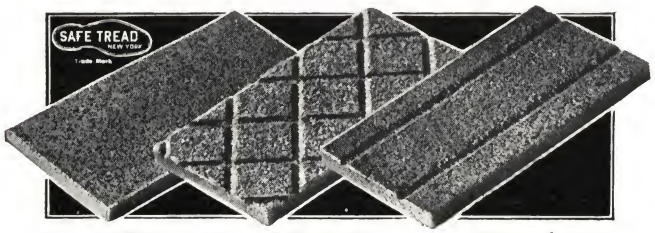
Consultations on walkway safety problems and tentative estimates on preliminary surveys may be obtained without obligation.

Only "Safe Tread" Is Furnished in Five Different Surfaces

Standard: *Plain—Hatched—Grooved.* Special: *"Duo-Plane"—"Sovac"*

Standard Surfaces

Plain, Hatched, Grooved—These surfaces, illustrated below, are common to all makes of abrasive metal and are furnished in various forms in cast iron, bronze, nickel and aluminum.



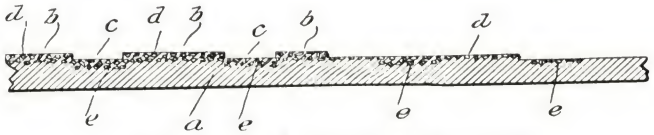
Plain Hatched Grooved

Plain and Hatched surfaces are preferable for stair treads, nosings, platforms, etc., where grooves parallel to the edge would be a hazard. The grooved surface is used mostly for door saddles of various types.

Special Surfaces

To meet the demand for still more desirable anti-slip quality, and to provide certain characteristics not obtainable in the common or Standard Surfaces of the "Safe Tread" and other makes of abrasive metals, two special surfaces known as "Duo-Plane" and "Sovac" have been deveolped. After service tests of several years under severest conditions they are recommended as the best available materials for their respective purposes.

"Duo-Plane"—An exclusive product of THE SAFE TREAD COMPANY, INC., "Duo-Plane" is designed for especially hard wear.



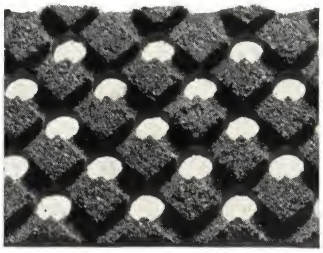
Cross Section of "Duo-Plane Safe Tread"

The "Duo-Plane Safe Tread" embodies a new principle by providing an upper or initial contact plane composed of the tops of *squares* (b.b.) about ¾x¾ in. separated by rectangular section valleys about $\frac{1}{16}$ in. deep and $\frac{13}{32}$ in. wide. Abrasive grains (d.d. and e.e.) are embedded at the time of casting, in *both* the squares and bottoms of the valleys to a depth of about $\frac{3}{32}$ in. in each. When elevations are worn down, contact begins on anti-slip surfaces at bottoms of the valleys, thus pro-

Duo-Plane Safe Tread
(Patented)

viding *double life. (In Standard Surfaces there is only one wearing plane thickness of abrasive.)* This type is especially desirable for maximum durability and effectiveness. Cast in iron in practically any form to meet specific requirements.

"Sovac"—Also an exclusive product of THE SAFE TREAD COMPANY, INC., "Sovac" is a surface of great durability and effectiveness, that will not "clog-up" under grease, oil, mud, dust, etc. "Sovac" Safe Tread was developed through the combined efforts of *safety engineers* in the oil industry and THE SAFE TREAD COMPANY, INC.



"Sovac" Safe-Tread

Features are:

(1) Diamond-hard abrasive surface is actually non-slip and extremely resistant to wear.

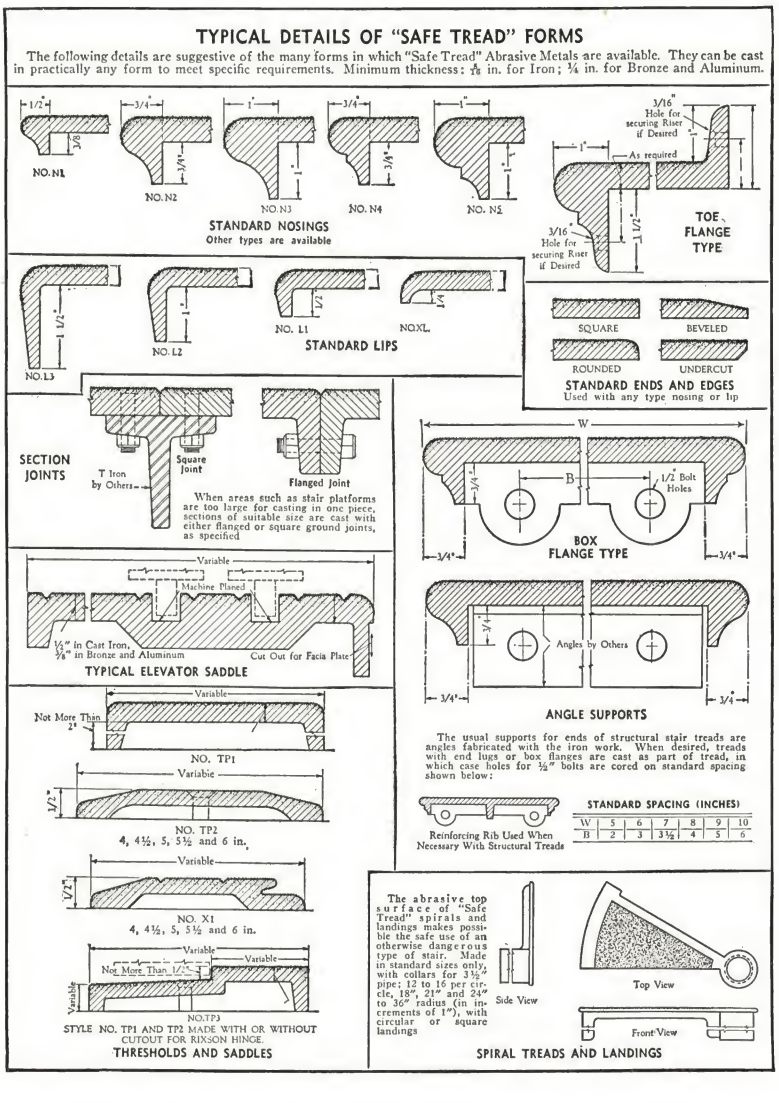
(2) Deep, wide, cross-hatched grooves take dirt and muck that would otherwise clog up walking surface.

(3) Diagonal grooves, facilitate cleaning.

(4) Large holes at groove intersection make treads actually self-cleaning when supported on angle irons or grating; or as a self-supporting "structural" tread.

(5) Made only of cast iron with aluminum oxide abrasive grains embedded in wearing surface, it is not susceptible to corrosive action of weather, acid fumes, or oil.

"Sovac" Safe Tread is cast in standard sizes for use in service pits, concrete steps, steel grid or wooden steps, ramps, ladders, platforms, etc.



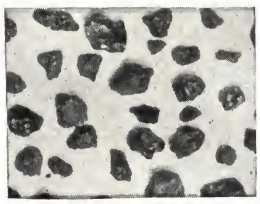
"SAFE TREAD" ABRASIVE GRAINS

For Incorporating or Embedding in New Cement and Terrazzo Floors to Add Durability and to Prevent Slipping.

"Safe Tread" Abrasive Grains are Solid crystalline aluminum oxide grains, made in arc type electric furnaces at Niagara Falls, supplied in specified sizes to meet all conditions of service. When embedded in granolithic and terrazzo floors they produce a slip-proof surface and add to the durability and wear resistance of the floor. They are non-porous and do not tear out in finishing.

Recommended for use in building entrances, railway stations, ramps and other surfaces where safety and durability are important considerations.

Size 12-30



Size 6-12

Application

For Heavy Duty Floors—Finish coat ½ to 1 in. thick, using a regular 1:2 mix, should be: 4 parts cement, 1 part abrasive grains, 7 parts sand.

For Light Duty Floors—The abrasive grains should be evenly sifted over the surface of finish coat (about ½ lb. per sq. ft.) and troweled in.

"Safe Tread" Abrasive Grains are furnished in kegs or bags. Minimum order 100 lbs.

Prices and samples on application.

UNIVERSAL SAFETY TREAD, INC.

111 Perry Street, LOWELL, MASS

UNIVERSAL SAFETY TREADS, STAIR NOSINGS AND DOOR SADDLES

UNIVERSAL ANTI-SLIP METAL TREAD, TYPE I

Universal Anti-Slip Metal Tread is suitable for new construction or repair work. It consists of a tinned steel baseplate to which is attached the hardest known abrasive grain (Al_2O_3) with a hard lead binder. These diamond-hard grains are embedded throughout the entire thickness of the tread to the baseplate and not only make the tread slip-proof for its entire life, but prevent the foot from being exposed to any slippery surface. The lead, which is a recognized non-slip metal, makes a very effective binder. Suitable sub-treads or support should be provided for the safety tread to rest upon. Universal Anti-Slip Metal Tread will positively stand up under the most severe service as proven by long and exclusive use in the Philadelphia subways.

It is *fireproof, scuffproof, non-porous, noiseless,* neat in appearance and affords positive immunity from slipping. Anti-slip treads can be furnished in flat or corrugated surface to meet specified requirements.

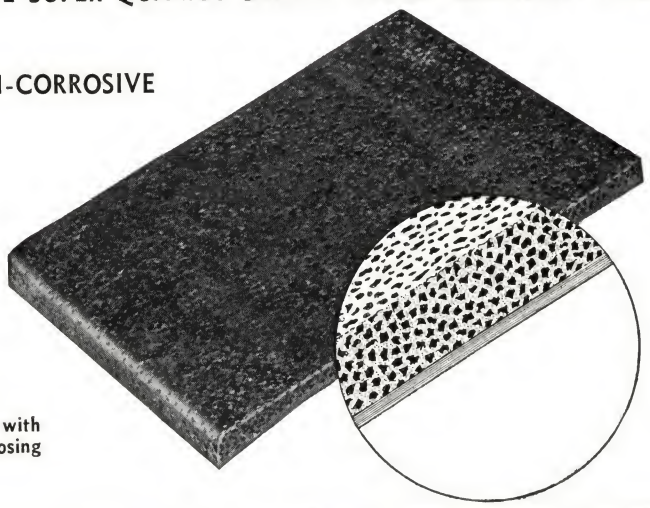
Sizes—Universal Anti-Slip Tread, Type I, is supplied in any width up to 8 in. and in any specified length up to 10 ft. either with or without reinforced or lip nosing and back edges square or beveled.

Standard thickness, ¼ in.

THE SUPER QUALITY SAFETY TREAD—ECONOMY THROUGH SAFE DURABILITY

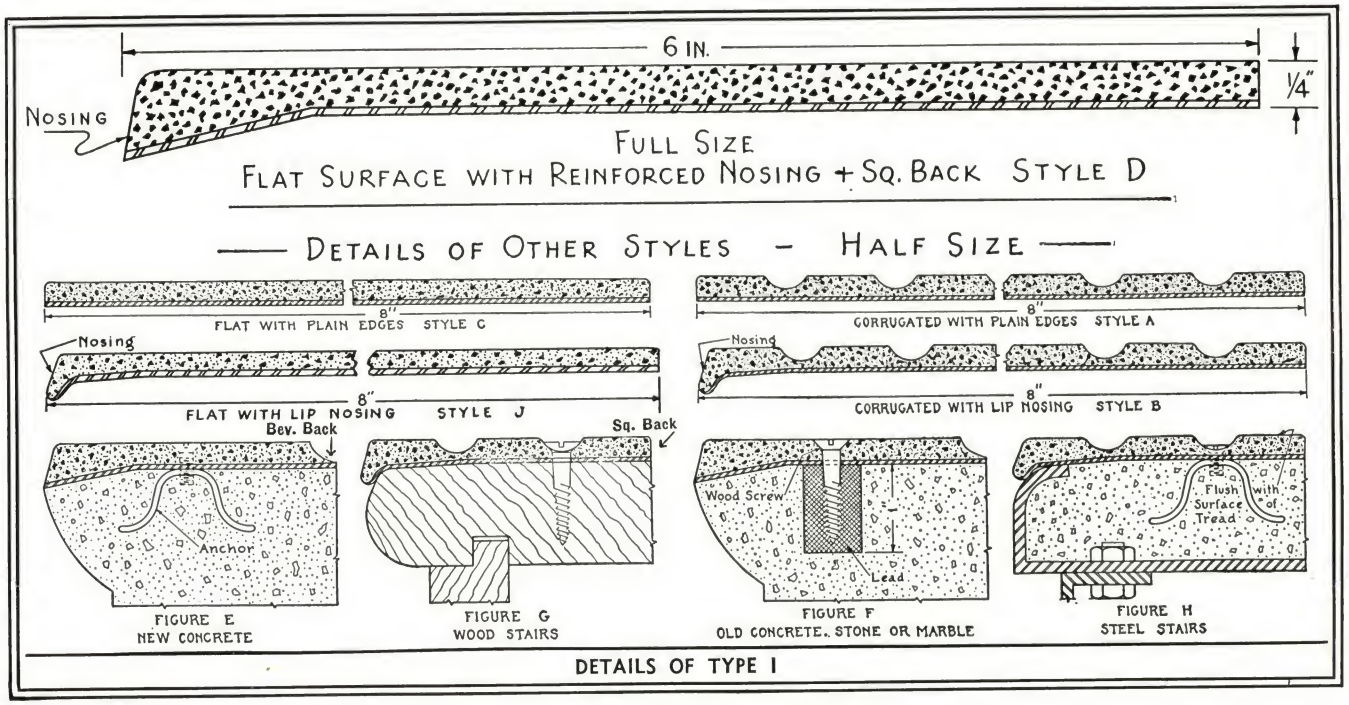
NON-CORROSIVE

FURNISHED UNPAINTED



Enlargement to show positive impregnation of abrasive 3/8 in. deep with hard lead binder making a solid mass.

Type I
Flat Style D, with Reinforced Nosing

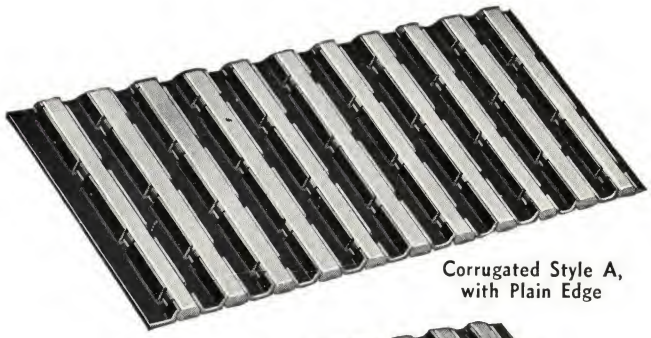


UNIVERSAL SAFETY TREAD, TYPE II

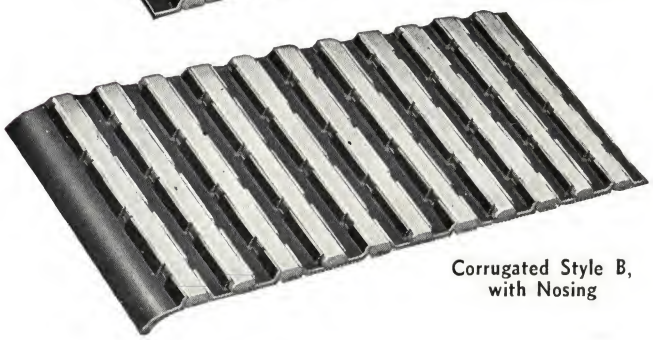
Universal Safety Tread, Type II, is constructed of a steel, brass, aluminum or stainless steel baseplate, punched to receive non-slip lead wires which are rolled in and firmly clamped. The lead fills the perforations and a non-slip surface is presented for its full thickness. There are no continuous metal ribs on the outer edge, which is the danger point on all stairs, but the lead, being exposed between the metal teeth, presents a non-slip edge at all times. This is especially important in descending stairways. A minimum of hard supporting metal and the maximum of non-slip lead form the wearing surface.

The baseplate can be extended to form a nosing of any depth required, which is especially desirable where evidences of repair are to be covered. We can furnish alloy-coated, galvanized steel or stainless steel to resist the action of salt water or dampness. The advantages of Universal Stainless Steel Safety Tread are most obvious, combining the utmost in lasting appearance with durability. Our brass treads are also recommended where it is necessary to have a rustproof and safe surface. Suitable sub-tread or support should be provided for the safety tread to rest upon.

Sizes—Universal Safety Tread, Type II, can be furnished in almost any width up to 12 ins. and in any specified lengths, either with or without nosing according to the requirements of the stairs or landings.

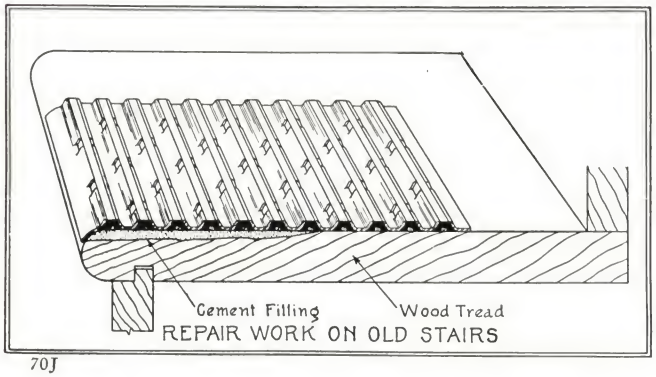


Corrugated Style A, with Plain Edge



Corrugated Style B, with Nosing

Detail Suggestion for Repair of Worn Stairs



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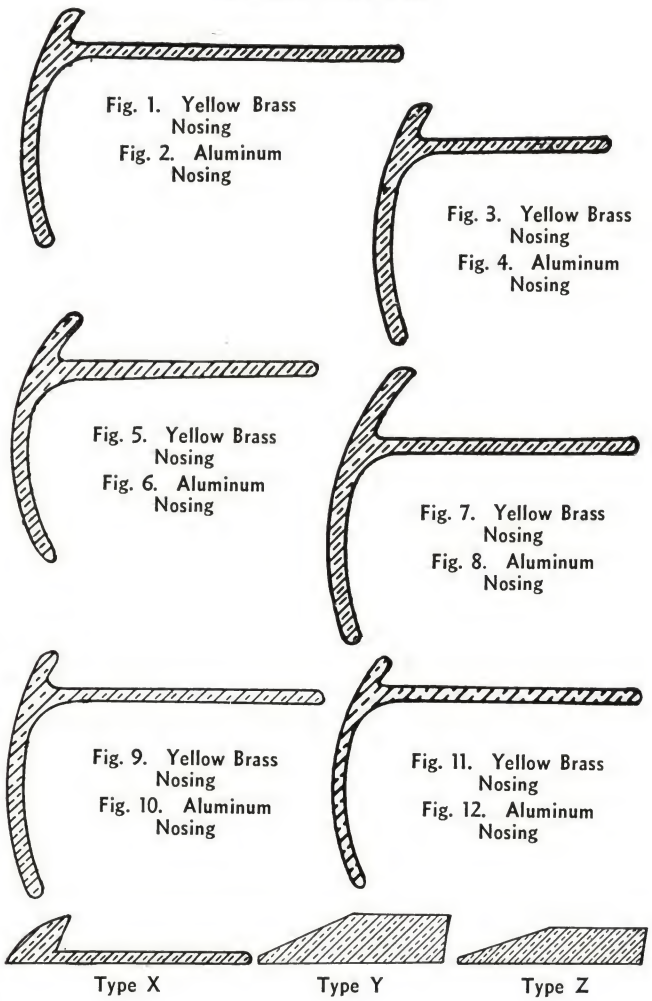
UNIVERSAL BRASS AND ALUMINUM NOSINGS

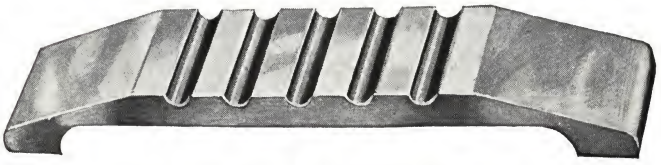
Universal Nosings are made of highly polished yellow brass and silvery white heat-treated aluminum and are designed to safeguard the front edge of steps and platforms when used in combination with other floor coverings. Furnished in any lengths up to 12 ft.

Styles of Universal Brass and Aluminum Nosings Details—Full Size



UNIVERSAL DOOR SADDLES

Furnished cut to length, drilled and countersunk.



Universal Brass Door Saddle, Corrugated

BRASS—CORRUGATED SURFACE

Width, in.	Height, in.
4	½
5	½
6	½

ROLLED STEEL—CORRUGATED SURFACE ONLY

Width, in.	Height, in.
4	½
5⅜	⅝
7	⅝

THE SAFETY PROCESSING CO.

"Saf-on" Safety Stair Tread

33 North Hazel Street, YOUNGSTOWN, OHIO

NEW YORK OFFICE: SAFETY PROCESS CO., INC., 39 Cortlandt Street, New York, N. Y.

Wire at Our Expense for Address of Nearest Sales Office

THE "SAF-ON" PROCESS INSURES SAFETY AND LONG LIFE WITHOUT AFFECTING THE APPEARANCE

Description

The "Saf-on" Process has been invented particularly for use on marble, travertine and similar ornamental stairs and provides a degree of safety and permanency that has never before been approached. It is a process that makes every step safe by impregnating the marble or other material with a special substance known as "Saf-onite" which prevents slipping or sliding, sets up no hazardous obstruction, and increases visibility of the tread.

Saf-on

TRADE-MARK
Reg. U. S. Pat. Off.

The "Saf-on" Process creates a condition of permanent safety. The embedded material is many times harder than the tread itself. It is so located that it carries the brunt of the traffic. This prevents wear and greatly increases life of the stairs.

This Is a "Saf-on" Step

A "Saf-on" Step is provided with an unprecedented degree of safety. Beauty of the stairs is not destroyed. The impregnated "Saf-onite" protrudes above the surface a distance of only $\frac{1}{32}$ in. This material has abrasive properties that render a definite safeguard

It may be applied to new or to existing steps. Three grooves are cut near the nosing and parallel to it. These are then filled with "Saf-onite" as shown in the detailed drawing. On curved treads, by use of special machines, the grooves are cut to conform with the contour of the tread, thereby assuring perfect non-slip, visible safety from every angle without affecting the appearance of the tread.

Applications

Especially for Stairs of Marble, Travertine or Terrazzo—The "Saf-on" Process is particularly desirable for stairs of marble or terrazzo but is just as advantageous for tile, wood and other materials whose smooth, slick surface creates a hazard.

Ramps, Vestibules, Sidewalks, and Elevator Thresholds—Beyond its use on staircases of every kind there are many other needs for the application of the "Saf-on" Process—such as ramps, vestibules, sidewalks, elevator thresholds, etc. It should be given serious consideration for any surface and location where experience and intelligent reasoning indicate the probability of falls from slipping.

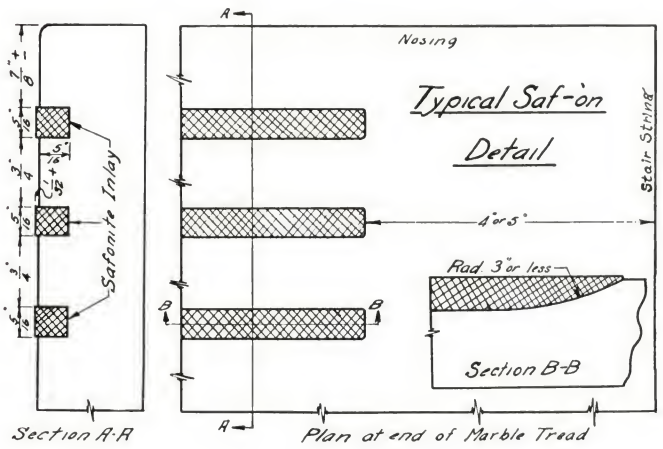
Finest Workmanship Guaranteed

Work of applying "Saf-on" Process is conducted by craftsmen of highest ability who use our patented machines for grooving marble, terrazzo and other materials. This workmanship has been so highly perfected that there is no danger of steps being marred or chipped in any manner. These workers are sent out only from district offices. We guarantee a finished job of finest character.

Specifications

Install treatment known as "Saf-on" in each tread and platform of all marble and (or) terrazzo stairs. This treatment to consist of providing three (3) grooves of proper width and depth near the nosing of each stair tread, platform and landing, as per detail, into which "Saf-onite" shall be applied in such a manner as to finish true and straight, slightly above the top surface of the tread and so as to form a safe non-slip surface. The "Saf-onite" when hardened shall adhere to the marble and become an integral part of the tread. This treatment to be installed by THE SAFETY PROCESS COMPANY, INC., 39 Cortlandt Street, New York, N. Y. [THE SAFETY PROCESSING CO., Youngstown, Ohio].

A special Specification, meeting Federal requirements and accepted by the Treasury Department will be furnished on request.



Cuyahoga County Courthouse, Cleveland, Ohio

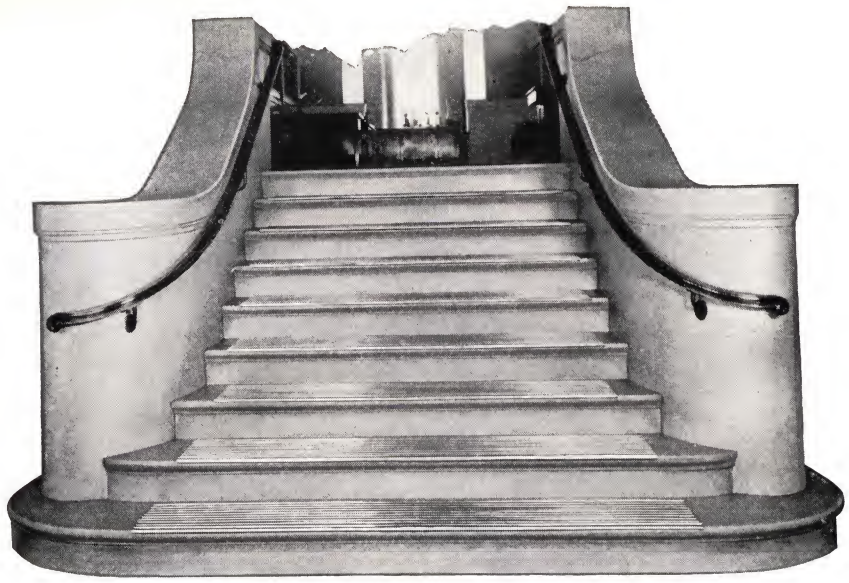
Write for Descriptive Booklet on "Saf-on"

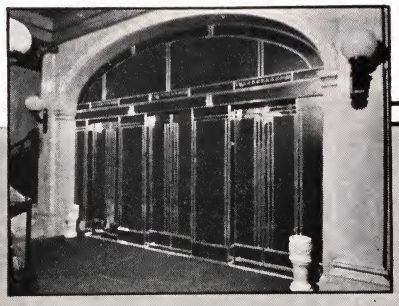
Metal Products by

WOOSTER

WOOSTER

STAIR TREADS
THRESHOLDS
SILLS
WALL TRIM
NOSING
EDGING





THE complete line of Wooster metal products consists of two distinct types of metal safety treads, Safe-Groove and Abrasive Cast; Metal Mouldings which include three distinct types of rolled and extruded shapes in a wide variety of modern designs; Nosings and Edgings which embrace not only the well-known standard shapes, but many new, distinctive designs.

Wooster Safe-Groove Treads are made in many standard widths which may be combined to obtain any desired width. They are produced in three different metals, Steel Base, White Alloy Base and Yellow Brass Base, with anti-slip ribs of Lead, or Abrasive Grits.

Wooster Abrasive Cast Treads are made in four different metals, cast iron, cast aluminum, cast bronze and cast nickel-bronze. Being cast to order, they may be made in practically any shape and in any desired size within certain limitations. The line includes Abrasive Cast Thresholds, Elevator Sills and Floor Plates.

Wooster Metal Mouldings include three different types, a one-piece type with moulding and base combined as one integral unit; a two-piece type consisting of the moulding and a separate clip base; a Driv-On type with fastening nails, or bolts, firmly attached for quick, easy installation.

Wooster Nosings and Edgings are produced in White Alloy metal and Yellow Brass. In addition to the original, standard shapes which have been used for many years for the protection of floor coverings, there are many new distinctive shapes done in strictly modern design which have aided materially in broadening the scope and usefulness of this type of trim.

CHECK LIST OF WOOSTER PRODUCTS

WOOSTER SAFE-GROOVE TREADS

Steel Base with Lead, or Abrasive Grits Anti-slip
White Alloy Base with Lead Anti-slip.
Yellow Brass Base with Lead, or Abrasive Grits Anti-slip.

WOOSTER ABRASIVE CAST TREADS

Cast Iron with Abrasive Grit surface.
Cast Aluminum with Abrasive Grit surface.
Cast Bronze with Abrasive Grit surface.
Cast Nickel Bronze with Abrasive Grit surface.

WOOSTER COMBINATION TREAD AND NOSING

Sure-Gard Nosing, White Alloy and Yellow Brass.
Sure-Foot Nosing, White Alloy and Yellow Brass.
Safe-Step Nosing, White Alloy with Lead Anti-slip.
Safe-Edge Nosing, White Alloy with 1 rib of Lead Anti-slip, and Yellow Brass with 1 rib of either Lead or Abrasive Grits Anti-slip.
Safe-Grip Nosing, White Alloy with 2 ribs of Lead Anti-slip, and Yellow Brass with 2 ribs of either Lead or Abrasive Grits Anti-slip.

WOOSTER NOSING AND EDGING

Security Nosing in White Alloy or Yellow Brass.
Majestic Nosing in White Alloy.
Unique Nosing in White Alloy. Also made with Drip-proof top.
LaSalle Nosing in White Alloy.
Security Edging in White Alloy or Yellow Brass.
Divider Edging in White Alloy or Yellow Brass.

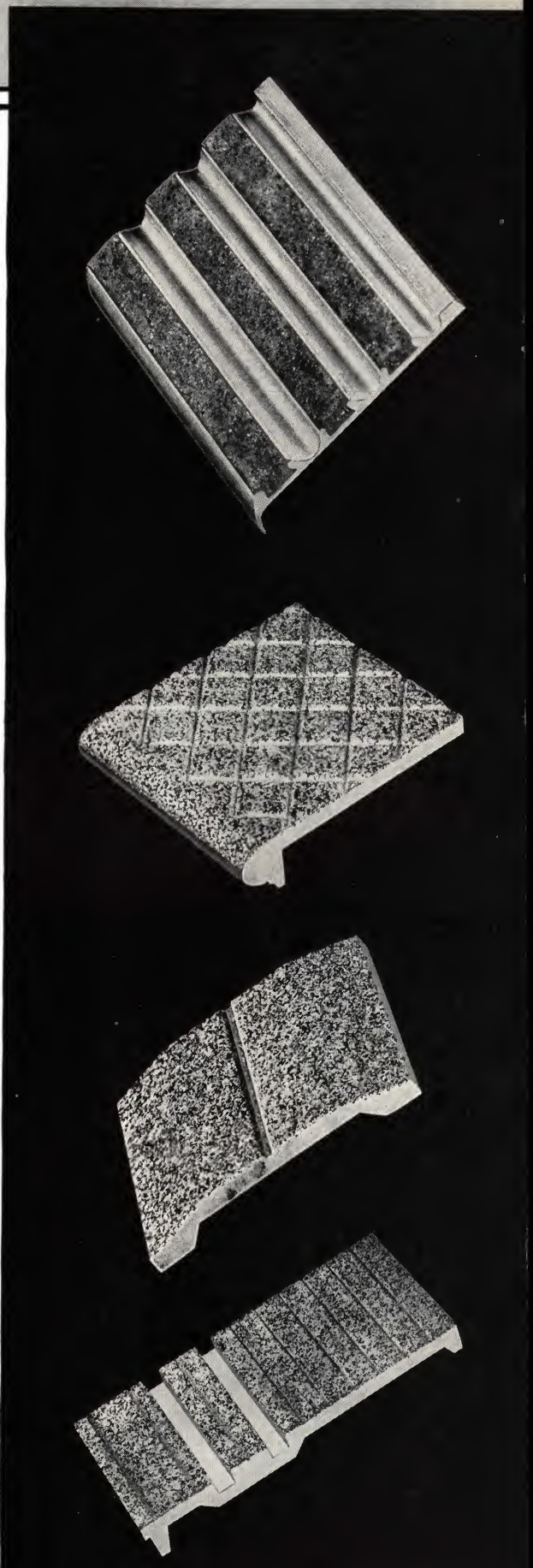
WOOSTER METAL WALL TRIM

One Piece Type made in White Alloy and Yellow Brass.
Driv-On, or Bolt-On made in White Alloy and Yellow Brass.
Drip-Proof Edging in White Alloy.
Reversible Edging in White Alloy.
Bar Edging in White Alloy or Yellow Brass.
Flat Top Bar Edging in White Alloy or Yellow Brass.
Offset Binder Bar in White Alloy or Yellow Brass.
Carpet Binder Bar in White Alloy or Yellow Brass.
Clip-Base Type in White Alloy and Yellow Brass in two designs and in Stainless Steel, with separate copper-coated steel base.

WOOSTER PRODUCTS INC.
WOOSTER . . . . . OHIO

WOOSTER SAFETY TREADS

for SAFETY, BEAUTY, UTILITY, AND PERMANENCE



WOOSTER ABRASIVE CAST TREADS

Made from four different metals, indicated by their trade names. They are produced by the modern, patented Wooster casting process. Abrasive Grits are deeply impregnated and securely held to the walking surface by a hard, wear-resisting matrix of metal. Made in standard widths from 2″ to 44″ and any standard length up to 9′6″. Furnished with plain, fluted or cross-hatched walking surfaces. Curved sections of any desired radius at slight additional cost. Metal and finishes are as follows:

FERROGRIT—Cast Iron with Abrasive Grits, finished black.

ALUMOGRIT—Cast Aluminum with Abrasive Grits. Standard finish bright silvery grey.

BRONZOGRIT—Cast Bronze with Abrasive Grits. Standard finish dark Old Gold.

NICKLOGRIT—Cast Nickel Bronze with Abrasive Grits. Standard finish bright silvery grey.

Wooster Abrasive Cast Thresholds

Wooster Abrasive Cast Thresholds are made from exactly the same metals and by the same patented process as Wooster Abrasive Cast Treads and are furnished with the same standard finishes. Abrasive Grits anti-slip walking surface. Ten standard types including flat, bevelled, weather-strip and weather-stop types. Ends mitered as desired. Cutouts for Shelby, Rixson, Bommer and other checking floor hinges. Standard widths 4″ to 12″; standard lengths up to 9′6″ in one section; greater lengths made in sections.

Wooster Abrasive Cast Elevator Sills

Made from the same metals and by the same process as Wooster Abrasive Cast Treads and Thresholds. Standard finishes are the same as described for treads. Standard sections include sills for Biparting doors, Single Speed, Two Speed and fixed panel type doors. Door guide grooves are machine planed, straight and true. Made with or without lugs, and with drilled and tapped recess for fascia plates.

Wooster Safe-Groove Treads

Made from three different metals, Steel, White Alloy and Yellow Brass. Ribs of Anti-slip 3/16″ deep alternate with 3/16″ deep narrow grooves. Overall thickness of tread 1/4″. Angle or square back. Cut to any desired length up to 16 ft. Lip or Long Nose standard width sections may be combined with standard width flat sections to cover any desired width. Treads with Abrasive Grits Anti-slip may be curved to any radius down to 4″ to 9″ depending upon width.

STEEL BASE is made in 7 standard sections and a variety of widths from 2 1/2″ to 6″. Lead or Abrasive Grits Anti-slip. Standard finish black.

WHITE ALLOY BASE is made in 9 standard sections and a variety of widths from 2 3/4″ to 6″. Lead Anti-slip only. Standard finish Woosterlite high luster; Satin or Matte on request.

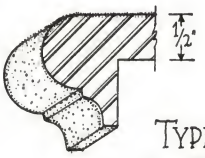
YELLOW BRASS BASE is made in 11 standard sections and a variety of widths from 2 1/8″ to 6″. Lead or Abrasive Grits Anti-slip. Standard finish Woosterlite high luster; Satin or Matte on request.

TYPICAL INSTALLATIONS

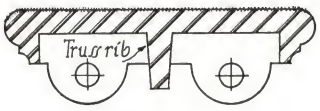
Elementary School, Maryville, Calif.
High School, Lykens, Ohio
Wheaton College, Wheaton, Ill.
High School, Odessa, Tex.
Republic Steel Corporation, Cleveland, Ohio
Wallace Stores, Lubbock, Tex.
Shillito Department Store, Cincinnati, Ohio
Armory, St. Marys, Ohio
Gymnasium, North Bend, Ore.
Water Softening Plant, New London, Ohio
Brentwood Housing Project, Washington, D. C.
College Court Housing Project, Louisville, Ky.
Phillip Morris Tobacco Co., Richmond, Va.
W. T. Grant Co., Tampa, Fla.
State Hospital, Peoria, Ill.
State Hospital, Anna, Ill.
Cudahy Packing Co., Salt Lake City Plant
Sears, Roebuck & Co., Lima, Ohio
H. J. Heinz Co., Pittsburgh, Pa.
F. W. Woolworth Co., New York City, N. Y.
Montgomery Ward & Co., Chicago, Ill.
Swift & Co., Chicago, Ill.

ABRASIVE CAST STAIR TREADS AND NOSINGS

FERROGRIT • BRONZOGRIT • ALUMOGRIT • NICKLOGRIT



TYPE 106-107-108



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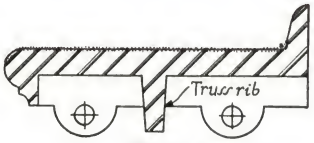

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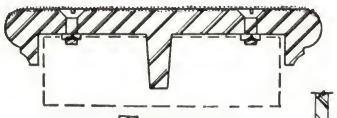

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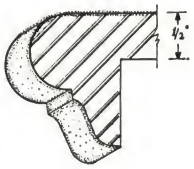
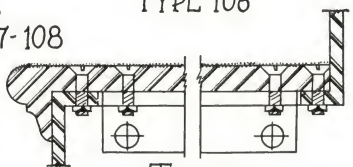
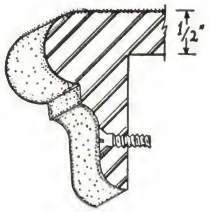


TYPE 104

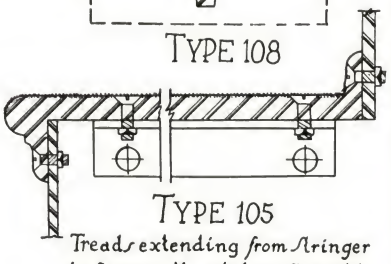


TYPE 104

Treads extending from Stringer to Stringer, Mounted on end angles and bent risers furnished by others.

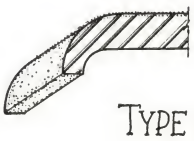


TYPE 105

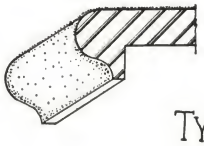


TYPE 105

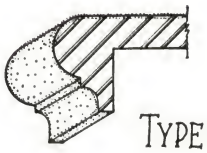
Treads extending from Stringer to Stringer, Mounted on Straight risers furnished by others.



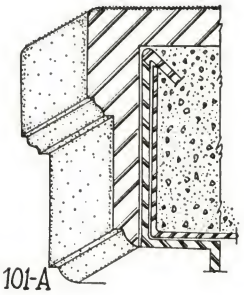
TYPE 101



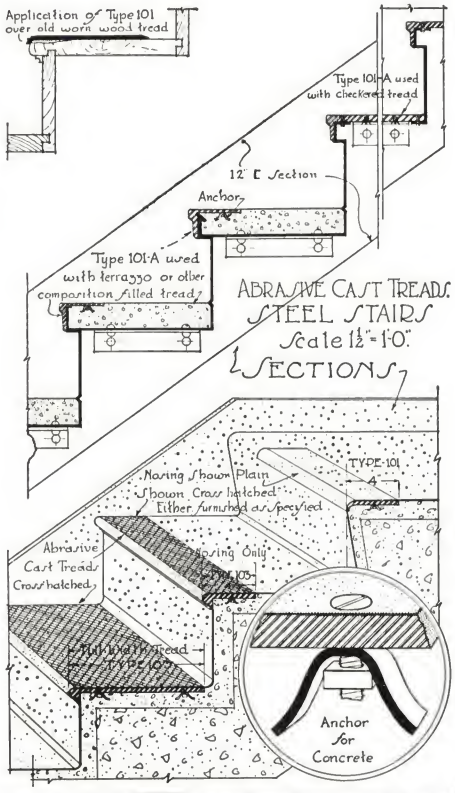
TYPE 102

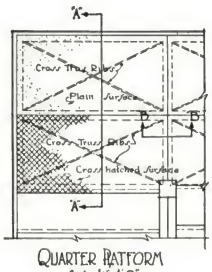


TYPE 103



TYPE 101-A





QUARTER PLATFORM
Scale ½"=1'0"

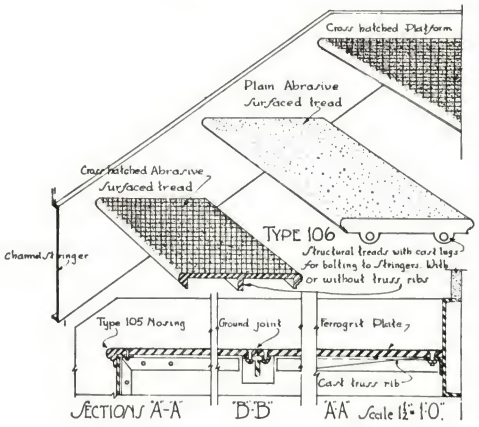


TABLE of STANDARD PRACTICE

WIDTH	LENGTH	TYPE 104	TYPE 105	WIDTH	LENGTH	TYPE 106	TYPE 107	TYPE 108
Up to 12"	Not over 9'6	3/8"	7/16"	Not over 12" x 42"		7/16"	7/16"	7/16"
12 to 24"	" " 9'6	7/16"	7/16"	" " 12" x 45"		½"	½"	½"
24 to 32"	" " 9'6	½"	½"	" " 11" x 51"		½"	½"	½"
32 to 44"	" 6'6	3/8"	3/8"	" " 12" x 60"		3/8"	3/8"	3/8"

Platforms not over 44" x 78". Larger in sections
Patent № 1920244. Other Patents Pending

TABLE of STANDARD PRACTICE

Types 101 ~ 102 ~ 103. Note 101A minimum 3/8".
Surface or Overall Width.

Thickness	Ferrogrit	Bronzogrit	Nicklogrit	Alumogrit	Length
¼"	Not made	Up to 4"	Up to 4"	Up to 9"	Not over 9'6"
5/16"	Up to 6"	" " 9"	" " 9"	" " 18"	long except
3/8"	" " 12"	" " 15"	" " 15"	" " 30"	when width
7/16"	" " 24"	" " 24"	" " 24"	" " 44"	exceeds 32" then
½"	" " 32"	" " 30"	" " 30"	" " 44"	length must
5/8"	" " 44"	" " 44"	" " 44"	" " 44"	not exceed 6'6"

WOOSTER PRODUCTS INC, WOOSTER OHIO.

Printed in U.S.A.

ABRASIVE CAST DOOR SILLS AND SADDLES

FERROGRIT • BRONZOGRIT • ALUMOGRIT • NICKLOGRIT

TYPE 100

FERROGRIT

BRONZOGRIT

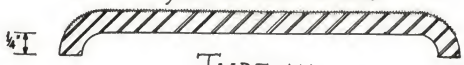
ALUMOGRIT

NICKLOGRIT

TYPE 110

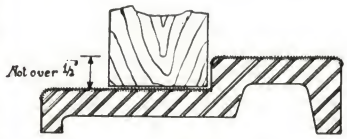
When used with Floor hinge cutouts refer to details below

TYPE 121



TYPE 111

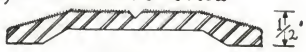
When used with Floor hinge cutouts refer to details below



TYPE 112

Weather Proof Threshold

TYPE 120



TYPE 115

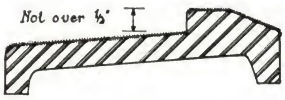
TYPE 109

Hook strip available when desired

TABLE of STANDARD PRACTICE
TYPES 100~109~110~111~115~119~120~121.

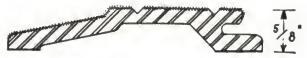
Up to	FERROGRIT	BRONZOGRIT	ALUMOGRIT	NICKLOGRIT
6" wide	3/8" thick	3/16" thick	5/16" thick	5/16" thick
12" wide	7/16" "	3/8" "	3/8" "	3/8" "

OVER 9'-6" MADE IN SECTIONS



TYPE 113

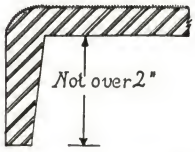
Weather Proof Threshold for Floors of unequal height



TYPE 119

Hook strip available when desired

WOOSTER ABRASIVE CAST ELEVATOR SILLS



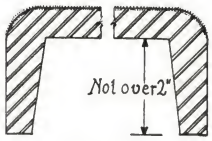
TYPE 116

TABLE of STANDARD PRACTICE

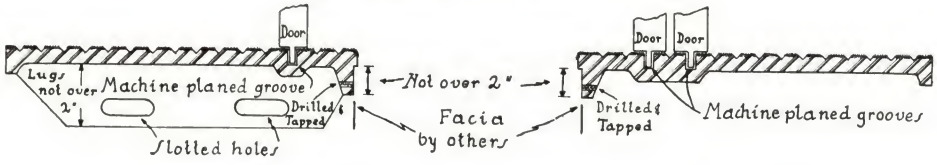
Ferrogrit —— Not less than	1/2" thick
Bronzogrit —— Not less than	3/8" thick
Alumogrit —— Not less than	3/8" thick
Nicklogrit —— Not less than	1/2" thick

Elevator Door sills over 9'-6" made in sections

Patent No. 1920244 Other Patents Pending

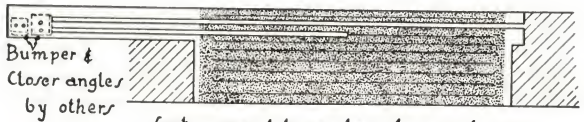


TYPE 117

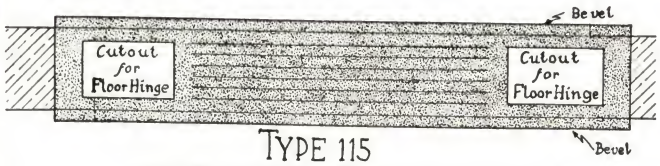


TYPE 401 with cast lugs

TYPE 401 without cast lugs

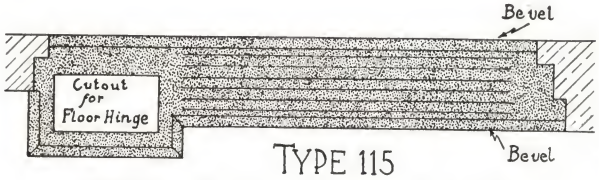


for two speed type elevator enclosure



TYPE 115

With Two Shelby or Rixson Style Cutouts



TYPE 115

With One Shelby or Rixson Style Cutout

WOOSTER PRODUCTS INC. WOOSTER, OHIO.

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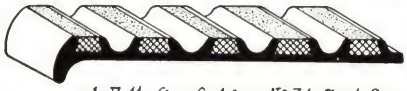
SAFE GROOVE STAIR TREADS

STEEL BASE WHITE ALLOY OR YELLOW BRASS ABRASIVE GRITS OR LEAD ANTI-SLIP

Full Size Section No. 33 Steel Base only 3½" wide Abrasive Grits or Lead Anti-Slip with Nosing and Angle Back.



½ Full Size Section No. 36 Steel Base only 4 in. wide Abrasive Grits or Lead Anti-Slip with Nosing and Angle Back.

Full Size Section No. 32 Steel Base only 3 in. wide Abrasive Grits or Lead Anti-Slip with Nosing and Square Back

½ Full Size Section No. 35 Steel Base only 6 in. wide Abrasive Grits or Lead Anti-Slip without Nosing

½ Full Size Section No. 34 Steel Base only 4 in. wide Abrasive Grits or Lead Anti-Slip without Nosing

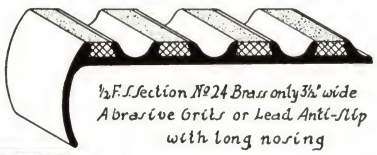
½ Full Size Section No. 31 Steel Base only 2½" wide Abrasive Grits or Lead Anti-Slip without Nosing

Similar White Alloy Sections
not illustrated, Lead Filler only

No. 40 - 4 in. with lip nosing
No. 41 - 4 in. without nosing
No. 42 - 6 in. without nosing
No. 43 - 3 in. without nosing
No. 44 - 2¾" with long nosing
No. 45 - 4⅝" with long nosing
No. 46 - 3 in. with square back

Full Size Section No. 21 Brass only 2¾" wide Abrasive Grits or Lead Anti-Slip with long nosing

Full Size Section No. 22 Brass only 3 in. wide Abrasive Grits or Lead Anti-Slip with lip nosing and square back



½ F.S. Section No. 24 Brass only 3½" wide Abrasive Grits or Lead Anti-Slip with long nosing

½ F.S. Sect. No. 20 Brass only 2⅛" wide Abrasive Grits or Lead Anti-Slip with long nosing

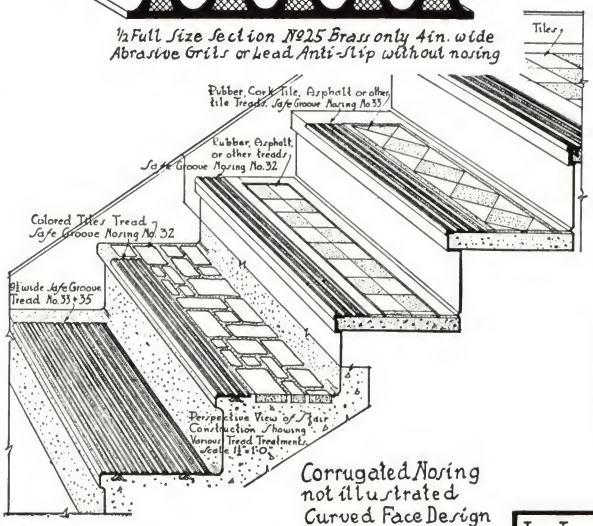
½ F.S. Sect. No. 23 Brass only 3½" wide Abrasive Grits or Lead Anti-Slip ¢ lip nosing

½ F.S. Section No. 27 Brass only 3" wide Abrasive Grits or Lead Anti-Slip no nosing

½ Full Size Section No. 28 Brass only 5¼" wide Abrasive Grits or Lead Anti-Slip with lip nosing

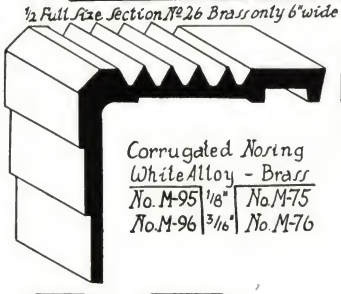
½ Full Size Section No. 26 Brass only 6" wide Abrasive Grits or Lead Anti-Slip no nosing

½ Full Size Section No. 25 Brass only 4 in. wide Abrasive Grits or Lead Anti-Slip without nosing



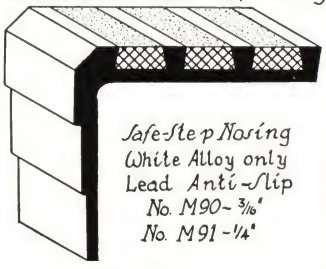
Corrugated Nosing not illustrated Curved Face Design White Alloy - Brass

—	1/8"	No. 75
No. 96	3/16"	No. 76
No. 97	1/4"	No. 77

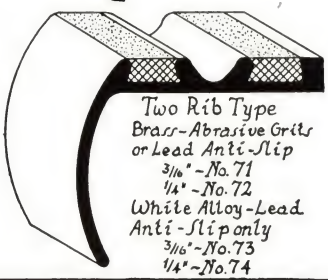


Corrugated Nosing White Alloy - Brass

No. M-95	1/8"	No. M-75
No. M-96	3/16"	No. M-76



Safe-Step Nosing White Alloy only Lead Anti-Slip
No. M90 - 3/16"
No. M91 - 1/4"



Two Rib Type Brass - Abrasive Grits or Lead Anti-Slip
3/16" - No. 71
1/4" - No. 72
White Alloy - Lead Anti-Slip only
3/16" - No. 73
1/4" - No. 74

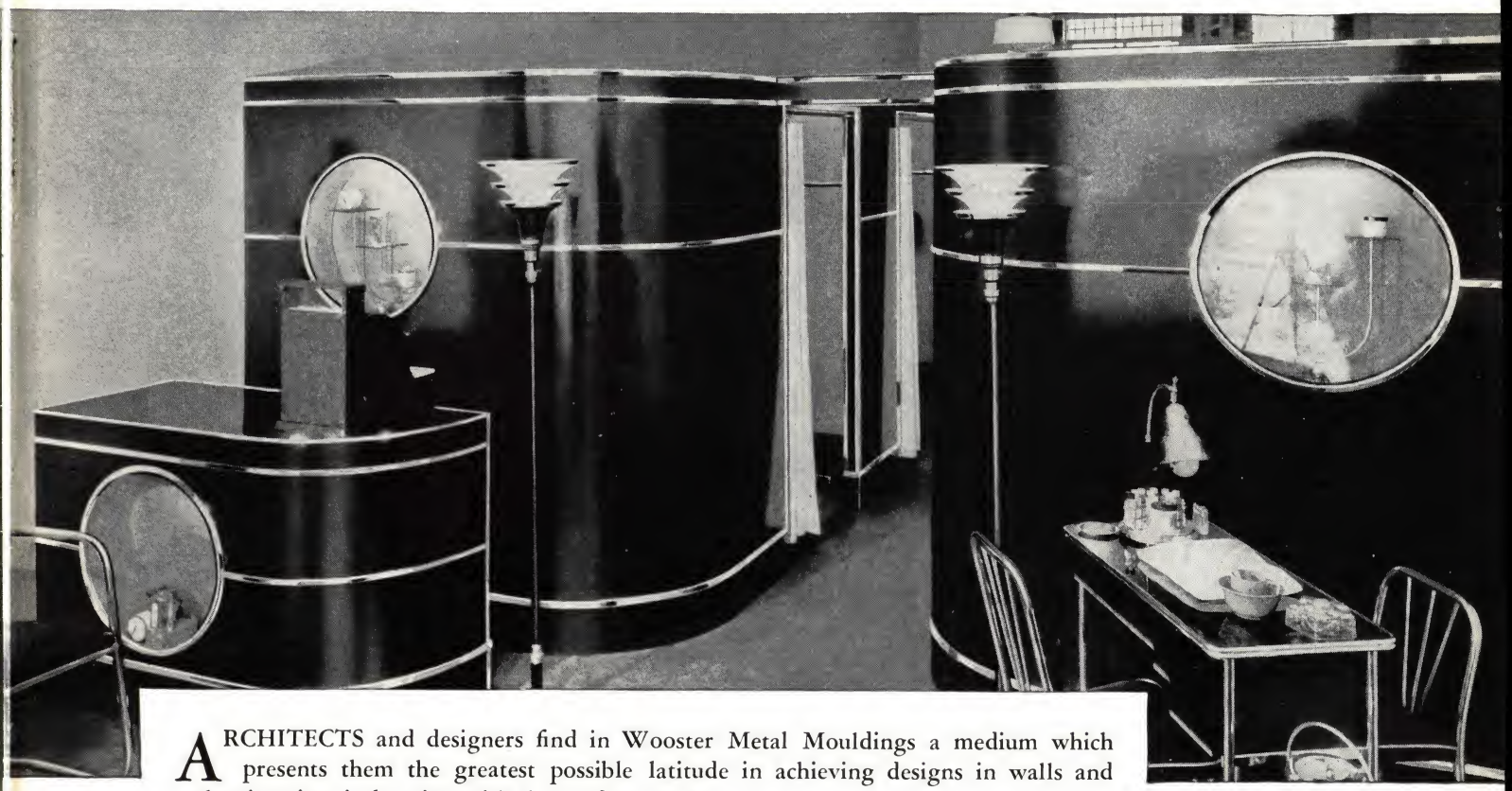
One Rib Type Brass - Abrasive Grits or Lead Anti-Slip
3/16" - No. 61
1/4" - No. 62
White Alloy - Lead Anti-Slip only
3/16" - No. 63
1/4" - No. 64

WOOSTER PRODUCTS INC. WOOSTER, OHIO.

Printed in U.S.A.

WOOSTER

METAL MOULDINGS FOR WALLS, CABINETS AND COUNTERS



ARCHITECTS and designers find in Wooster Metal Mouldings a medium which presents them the greatest possible latitude in achieving designs in walls and other interiors in keeping with the modern mode.

Wooster Metal Mouldings find great favor with contractors because of extreme simplicity of application. Among the three types is one that exactly fits any installation requirement—One-Piece Type which nails or screws direct to the wall; the wall covering entirely conceals nails or screws . . Driv-on or Bolt-on Type with nails or screws clinched in short spaces in the grooved base of the moulding . . Clip-Base Type; the moulding is held by clip in base which is first nailed to the wall—a very effective and versatile method of application. No special equipment nor unusual skill is called for in any case.

Alterations and replacements can always be made without great cost or inconvenience.

The quality of materials and fine durable finish of Wooster Metal Mouldings give assurance that the job will be structurally correct and present the finest appearance. They acually glorify the materials they secure in place.

Even when low cost is an important consideration, Wooster Metal Mouldings will be found quite in line; for while their quality and finish are of the first order, they are not expensive.

No matter what the job, you can better fulfill the conditions, attain finer results, with Wooster Metal Mouldings, for Wooster provides the greatest variety of styles, finishes and methods of application.

TYPICAL INSTALLATIONS

Fred Sharby Theatre, St. Albans, Vt.
Bancroft Hotel, Saginaw, Mich.
Kennth S. Kassler Residence, Princeton, N. J.
Stone Bros., Canton, Ohio
James McMillan Residence, Greenwich, Conn.
Nurses Home, St. Francis Hospital, Peoria, Ill.
Bickford's Restaurant, New York City
Central Democratic Club, Harrisburg, Pa.
Lindner Co. Store, Cleveland, Ohio
United Drug Co., Boston, Mass.
Metropolitan Theatre, Boston, Mass.
Coca-Cola Bottling Plant, Indianapolis, Ind.
Thompson Restaurant, Louisville, Ky.
Don Bosco Seminary, Newton, N. J.
Redondo Union High School, Redondo Beach, Calif.
High School, Menasha, Wisc.
Witham Memorial Hospital, Lebanon, Ind.
Stanford Assembly Hall, Palo Alto, Calif.
St. Cecelia Church, Chicago, Ill.
St. Michael's Home, Glen Ridge, S. I., N. Y.
High School, Montpelier, Idaho
Law School Bldg., L.S.U., Baton Rouge, La.
Civil Court Bldg., St. Louis, Mo.
F. W. Woolworth Co. 100 Stores
Cannon Shoe Co. 21 Stores
G. C. Murphy Co. 9 Stores
Amherst College, Amherst, Mass.
Alabama Power Co., Selma, Ala.

WOOSTER PRODUCTS INC., WOOSTER, OHIO

Representatives in the principal cities
New York office: 101 Park Ave.
Chicago office: 324 W. Washington St.

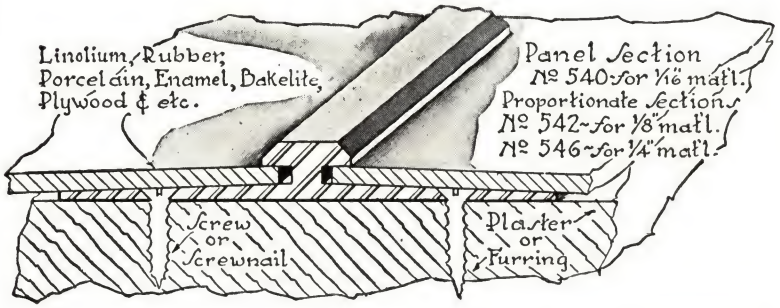
WOOSTER ONE-PIECE TYPE METAL MOULDINGS

Whether the design be simple or intricate, Wooster Metal Mouldings best contribute to interpret it to the satisfaction of both architect and client; for the Wooster line includes a type and a size to produce any desired effect.

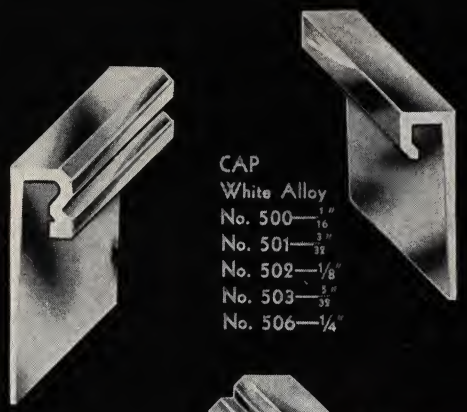
This One-Piece Type is particularly easy to install, as it is applied direct to the wall, and when the material is in place, no screw or nail is visible. Designed primarily for flexible materials, it has proved quite as efficient for rigid materials, such as Plywoods, Hardboards, Structural Glass, Bakelite Laminated Panels, Porcelain Enamels, etc. A wide range of standard sizes to accommodate materials of various thicknesses is constantly carried in stock.

A patented feature, exclusive with Wooster, is the "Feather-Edge" Flange Base. This affords a great advantage in presenting ample space for securing fastenings to furring, the wings of the moulding grip and hold the material firmly in place.

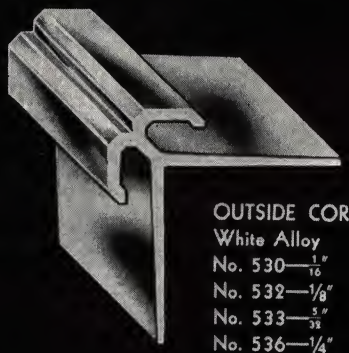
Wooster Metal Mouldings, One-Piece Type, made of White Metal Alloy in integral units, are sturdy and rigid, and their beauty delights the eye. Three standard finishes—Woosterlite High Luster, Satin, and Matte. Also made in Wooster Alumilite colors.



Pat. Nos. 1722660, 1910554

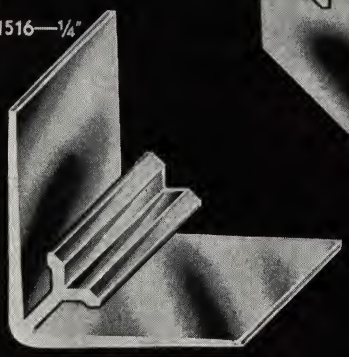


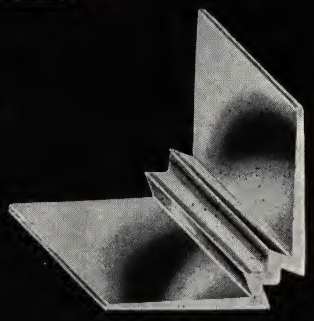
CAP
White Alloy
No. 500—1/16"
No. 501—3/32"
No. 502—1/8"
No. 503—5/32"
No. 506—1/4"



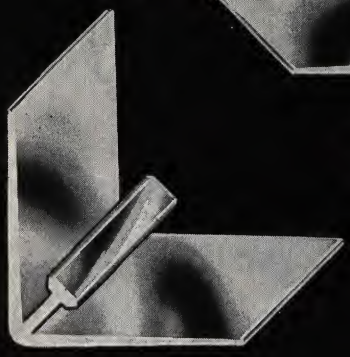
WAINSCOT
White Alloy
No. 510—1/16"
No. 512—1/8"
No. 516—1/4"
Brass
No. 1516—1/4"

OUTSIDE CORNER
White Alloy
No. 530—1/16"
No. 532—1/8"
No. 533—5/32"
No. 536—1/4"
Brass
No. 1536—1/4"

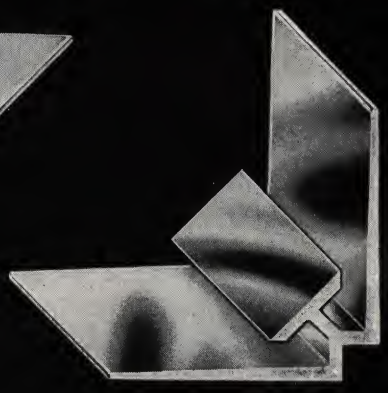




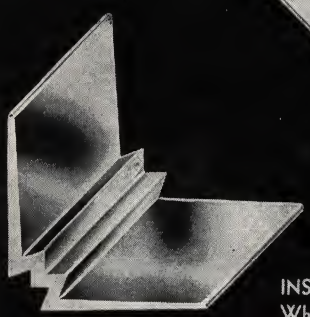
INSIDE CORNER
White Alloy
No. 520—1/16"
No. 522—1/8"
No. 523—5/32"
No. 526—1/4"
Brass
No. 1526—1/4"



INSIDE CORNER
White Alloy
No. 622A—1/8"



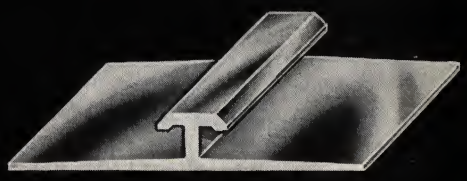
INSIDE CORNER
White Alloy
No. 622B—1/8"



INSIDE CORNER
White Alloy
No. 622C—1/8"

INSIDE CORNER
White Alloy
No. 622—1/8"

COVE
White Alloy
No. 550—1/16"
No. 552—1/8"



PANEL
White Alloy
No. 540—1/16"
No. 541—3/32"
No. 542—1/8"
No. 543—5/32"
No. 546—1/4"
Brass
No. 1546—1/4"

CLIP-BASE TYPE WOOSTER METAL MOULDINGS

The Clip-Base Type effectively surmounts every installation difficulty. With it, Wooster Metal Mouldings can be applied with any type of wall material anywhere, and attain the finest effects desired by the architect or builder. No special skill or tools are required. Installation is greatly simplified and costs reduced to rock bottom.

Note these three simple operations:

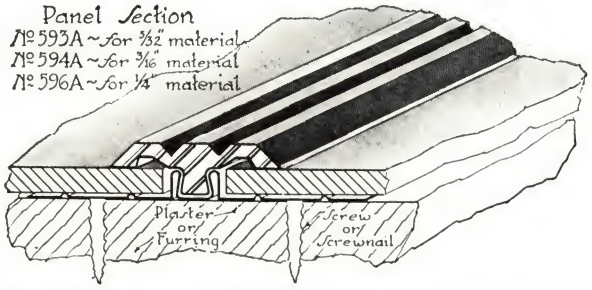
1. Apply Clip-Base in position predetermined by size of material.
2. Apply the wall covering as directed by the manufacturer.
3. Snap moulding on to the Clip Base.

Wooster Metal Mouldings with Clip-Base Type impart new beauty to and bring out the fullest decorative possibilities of all kinds of flexible and rigid materials, such as Linoleum, Rubber, Bakelite, Asbestos Tile, Plywood, Hardboard, Glass, Porcelain Enamel, etc. They contribute a note of striking beauty that is the very essence of modern design.

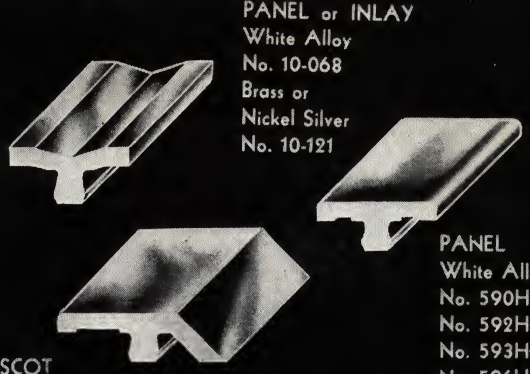
Standard sections accommodate materials from 1/16" to 1/2"; special sections are obtainable for materials of greater thickness.

Made with plain surfaces in White Alloy, Yellow Brass and Stainless Steel.

Fluted surfaces are available in White Alloy and Yellow Brass. White Alloy sections may be obtained in Wooster Alumilite colors.



U. S. Pat. No. 1977073 United Kingdom of Great Britain Pat. No. 20135—34



PANEL or INLAY
White Alloy
No. 10-068
Brass or
Nickel Silver
No. 10-121

PANEL
White Alloy
No. 590H—1/16"
No. 592H—1/8"
No. 593H—5/32"
No. 596H—1/4"
Brass
No. 1596H—1/4"

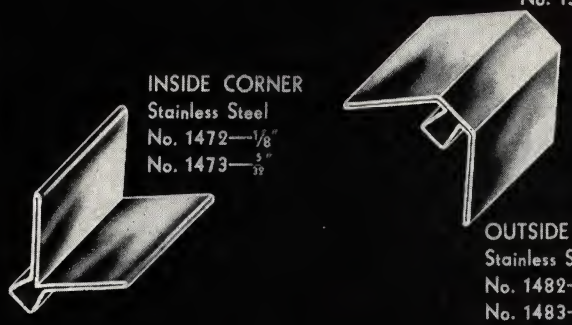
WAINSCOT
White Alloy
No. 560H—1/16"
No. 562H—1/8"
No. 563H—5/32"

WAINSCOT
White Alloy
No. 563J—5/32"

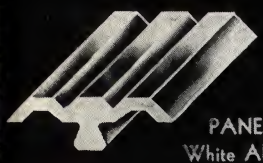
INSIDE CORNER
White Alloy
No. 570H—1/16"
No. 572H—1/8"
No. 573H—5/32"
No. 576H—1/4"
Brass
No. 1576H—1/4"

OUTSIDE CORNE
White Alloy
No. 580H—1/16"
No. 582H—1/8"
No. 583H—5/32"
No. 586H—1/4"
Brass
No. 1582H—1/8"
No. 1586H—1/4"

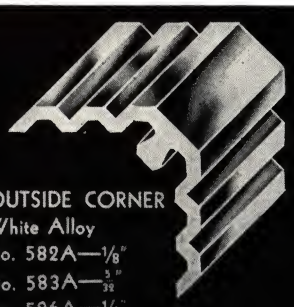
INSIDE CORNER
Stainless Steel
No. 1472—1/8"
No. 1473—5/32"



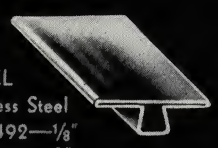
OUTSIDE CORNER
Stainless Steel
No. 1482—1/8"
No. 1483—5/32"



PANEL
White Alloy
No. 592A—1/8"
No. 593A—5/32"
No. 596A—1/4"
No. 599A—1/2"
Brass
No. 1593A—5/32"



OUTSIDE CORNER
White Alloy
No. 582A—1/8"
No. 583A—5/32"
No. 586A—1/4"
No. 589A—1/2"
Brass
No. 1583A—5/32"

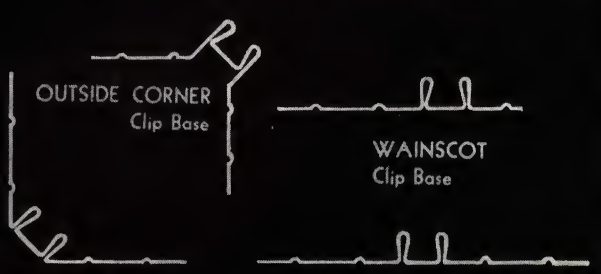


PANEL
Stainless Steel
No. 1492—1/8"
No. 1493—5/32"

WAINSCOT
Stainless Steel
No. 1462—1/8"
No. 1463—5/32"

INSIDE CORNER
White Alloy
No. 572A—1/8"
No. 573A—5/32"
No. 576A—1/4"
No. 579A—1/2"
Brass
No. 1573A—5/32"

WAINSCOT
White Alloy
No. 562A—1/8"
No. 563A—5/32"
No. 566A—1/4"
No. 569A—1/2"
Brass
No. 1563A—5/32"



These Clip Base Sections used with all sections listed on this page.

WOOSTER
NOSINGS AND EDGINGS

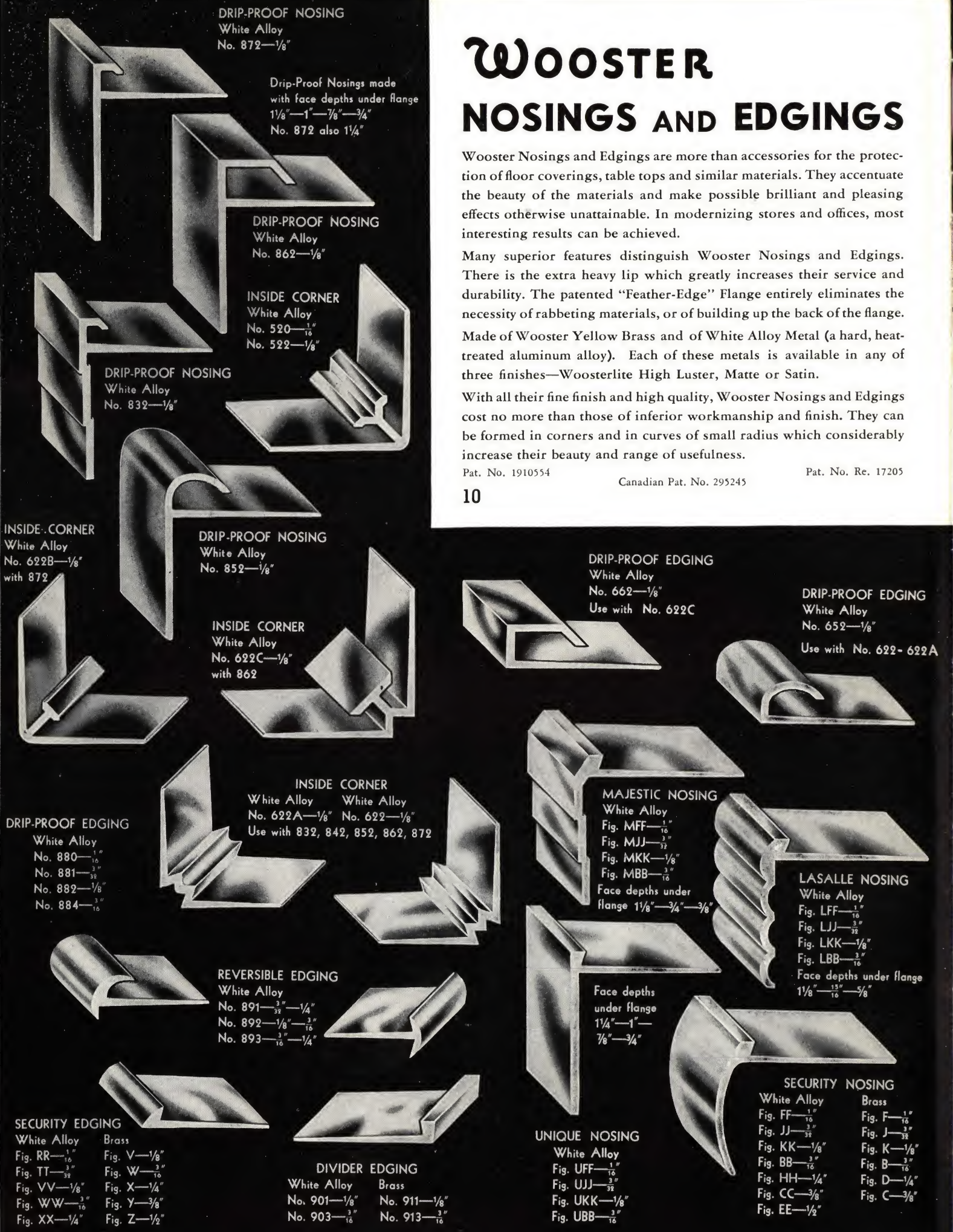
Wooster Nosings and Edgings are more than accessories for the protection of floor coverings, table tops and similar materials. They accentuate the beauty of the materials and make possible brilliant and pleasing effects otherwise unattainable. In modernizing stores and offices, most interesting results can be achieved.

Many superior features distinguish Wooster Nosings and Edgings. There is the extra heavy lip which greatly increases their service and durability. The patented "Feather-Edge" Flange entirely eliminates the necessity of rabbeting materials, or of building up the back of the flange.

Made of Wooster Yellow Brass and of White Alloy Metal (a hard, heat-treated aluminum alloy). Each of these metals is available in any of three finishes—Woosterlite High Luster, Matte or Satin.

With all their fine finish and high quality, Wooster Nosings and Edgings cost no more than those of inferior workmanship and finish. They can be formed in corners and in curves of small radius which considerably increase their beauty and range of usefulness.

Pat. No. 1910554 Canadian Pat. No. 295245 Pat. No. Re. 17205



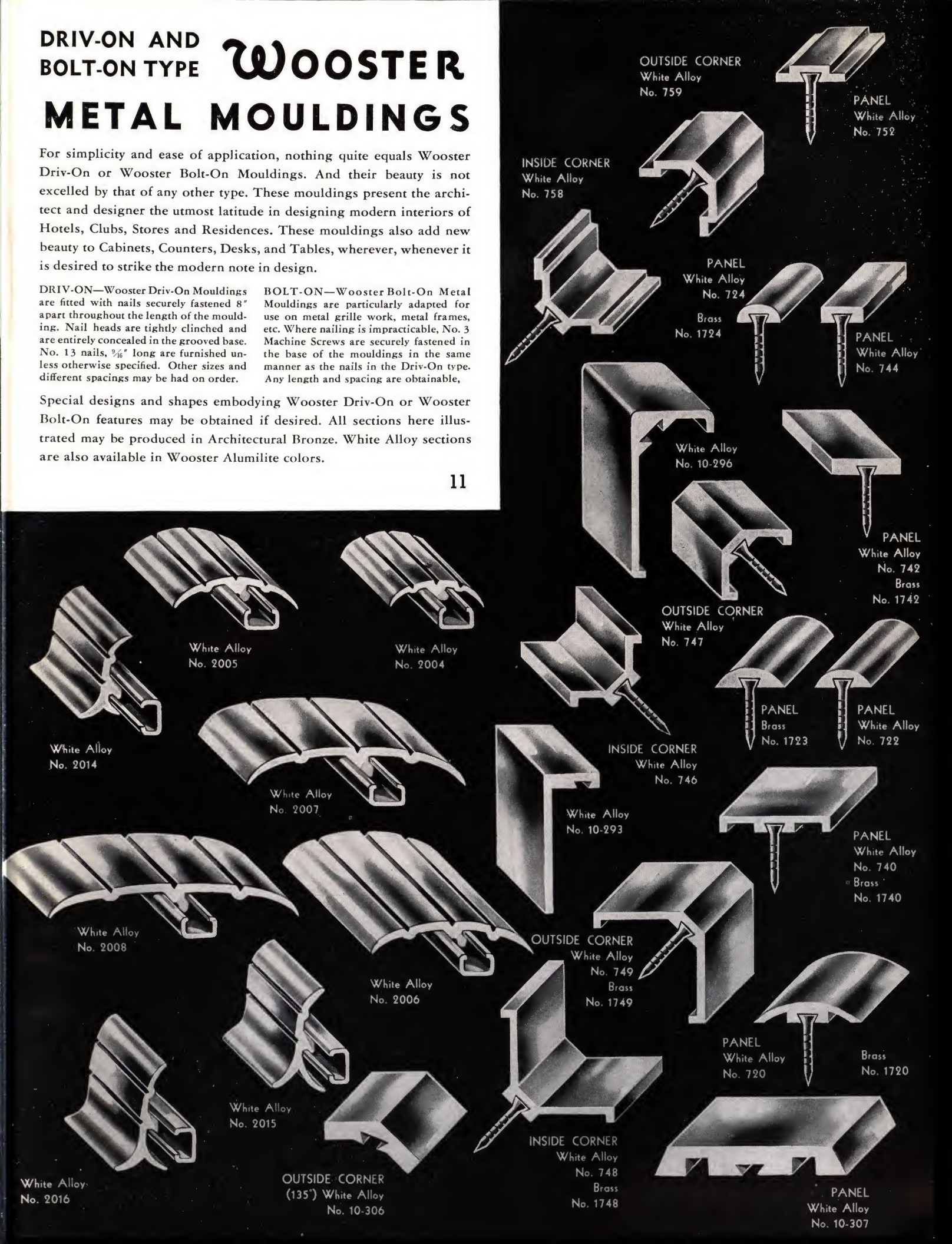
DRIV-ON AND BOLT-ON TYPE WOOSTER METAL MOULDINGS

For simplicity and ease of application, nothing quite equals Wooster Driv-On or Wooster Bolt-On Mouldings. And their beauty is not excelled by that of any other type. These mouldings present the architect and designer the utmost latitude in designing modern interiors of Hotels, Clubs, Stores and Residences. These mouldings also add new beauty to Cabinets, Counters, Desks, and Tables, wherever, whenever it is desired to strike the modern note in design.

DRIV-ON—Wooster Driv-On Mouldings are fitted with nails securely fastened 8" apart throughout the length of the moulding. Nail heads are tightly clinched and are entirely concealed in the grooved base. No. 13 nails, 7/16" long are furnished unless otherwise specified. Other sizes and different spacings may be had on order.

BOLT-ON—Wooster Bolt-On Metal Mouldings are particularly adapted for use on metal grille work, metal frames, etc. Where nailing is impracticable, No. 3 Machine Screws are securely fastened in the base of the mouldings in the same manner as the nails in the Driv-On type. Any length and spacing are obtainable,

Special designs and shapes embodying Wooster Driv-On or Wooster Bolt-On features may be obtained if desired. All sections here illustrated may be produced in Architectural Bronze. White Alloy sections are also available in Wooster Alumilite colors.



WOOSTER

PRODUCTS INCORPORATED, WOOSTER, OHIO

Representatives in the principal cities

New York office: 101 Park Ave.

Chicago office: 324 W. Washington St.

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ESTABLISHED IN 1876

LOGAN CO.

Spiral Slide and Tubular Fire Escapes

500 North Buchanan Street, LOUISVILLE, KY.

REPRESENTATIVES IN PRINCIPAL CITIES

Products

LOGAN SPIRAL SLIDE ESCAPES for use on office buildings, apartments, hotels, schools, orphanages, hospitals and institutions.

LOGAN TUBULAR FIRE ESCAPES for schools and institutions.

LOGAN CHUTES (Fire Escapes, Tubular and Spiral).

For Logan Ornamental Iron Work, see File Index.

Facilities

A long established firm, equipped to execute contracts in any part of the country. We erect the escape complete.

Advantages of the Spiral Slide Escape

Has an exit capacity three times greater than an ordinary stairway, but uses only 40% as much floor space.

The cost compares favorably with pressed steel stairs. In many cases the spiral escape is much less in cost.

There are no steps, consequently there is no chance for stumbling or falling. Escape can be entered from many floors at the same time. There is no acceleration, therefore escape can be used on thirty-story buildings just as safely as on buildings of one or two stories.

Architects everywhere are now using the Logan Spiral Escape to solve their emergency exit problem. They are designing the stairways to handle normal load only—emergency exit capacity furnished by Logan Spiral Slide Escape. It saves more than half the space. Exit capacity three times greater than average stairway.

30-Story Spiral Escape in Ramsey Tower, Oklahoma City

WALTER AHLSCHLAGER, Architect

Specifications—Spiral Slide

The fire escape shall be the Logan Spiral Slide Escape made by LOGAN CO., Louisville, Ky. It shall be placed upon a concrete foundation.

The escape proper shall be entirely of steel, 5 ft. in diameter, placed as shown on plans, and shall have one entrance at each floor above the first.

The cylinder shall be of No. 12 U. S. Standard gauge sheet steel, for the first 18 in.; the next 6 ft. of No. 14 gauge, and the remainder of No. 16.

The spiral slide shall be of No. 16 gauge galvanized sheet properly banked at outside and securely attached to a center core of 3-in. core inside diameter standard black pipe. Slide to be dished so as to prevent contact with outside shell and is to be made in overlapping sections so it will present no crevices or cracks.

Entrance doors shall be wood core metal covered, in pairs, equipped with single action spring hinges. *(Omit this paragraph on outside installations.)*

"Doors can be equipped with panic bar locks, electric locks or entrance lights at additional expense—these provide protection against falling through entrance doors."

Exit doors shall be one leaf opening outward and provided with brass automatic inside latch with touchplate to operate by the pressure of the smallest child.

The entire escape shall be manufactured in assembled sections about 7 ft. high, with an angle ring at the top and bottom of each section, shall be set up at the factory and riveted permanently together to insure proper fitting, and each section properly marked to correspond with a setting diagram to be furnished by manufacturers. There shall be no projections of any sort on the upper surface of slide; all rivets being recessed and all edges of sheets ground smooth.

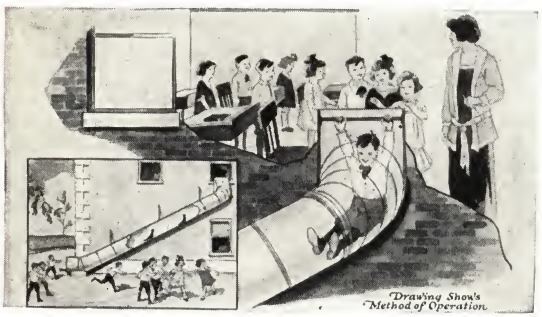
Entire escape, except slide, which is galvanized, shall have one coat of best mineral paint at factory, and sufficient additional paint furnished to give a second coat after erection.

For Exterior Installations Add These Specifications—The roof shall be conical in shape of No. 16 gauge projecting not less than 3 in. beyond cylinder. Runway floor shall be of perforated sheet steel not less than No. 14 gauge on suitable angle framing with an enclosed vestibule provided at each entrance with entrance doors in two leaves each, arranged to swing in, and provided with springs.

Near the second or third story floor line and for each two stories above this point, the escape shall be securely braced to the building by a band and tie rod extending through wall and a strut of 3-in. inside diameter pipe with cast iron bearing shoes for cylinder and wall.

Note: Hospital escape is 7 ft. in diameter. Material sizes given are sufficient for a 65-ft. high escape, 5 ft. in diameter. On higher inside installations, brackets are provided to rest on floor construction. On higher exterior installations, heavier sheet steel is used. Escape weighs 100 lbs. a vertical foot in the 5-ft. diameter.

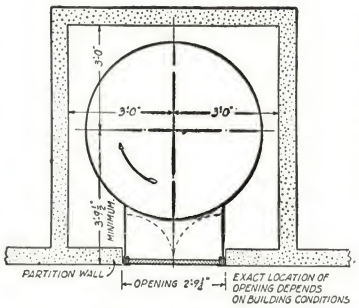
TUBULAR ESCAPE



Tubular Slide Fire Escape (Patented)

Tested by Underwriters' Laboratories, Inc., approved and listed as Standard

ENTRANCE PLAN FOR LOGAN SPIRAL



Plan of Entrance

Logan Spiral Slide Escape

Logan Spiral is not an experiment. Thousands of installations have been made and found more than satisfactory. Note particularly; no dizziness, no heating of trouser seat, no increase in momentum—even on tall buildings. Write for catalog giving layouts and dimension plans

Right:

Outside Installation, Standard 5-ft. Diam.

For hospitals a 7-ft. diameter handles patients on 36-in. mattress

Specifications—Tubular Slide

School Type—Entrance to the escape to be 30 in. wide, 42 in. high; sections to be 30 in. in diameter and not more than 38 in. long and have 1½x1½x⅛-in. angle iron rings riveted to each end for joining sections. Angle iron rings to be bolted together with ⅜x1 in. bolts, udelyte finish. A channel iron band is placed over the top of the angle iron rings to make the joint watertight. The elbow shall have a throat radius of 8 in. The easement or lower end breaks from a 30° angle to horizontal, and is about 6 ft. long; it flares from a 30-in. diameter to oval shape 36 in. high by 30 in. wide. The incline of the tube is about 30°.

Entrance on inside of building to be closed with double doors 15 in. wide, 42 in. high, weatherstripped, equipped with panic bolt hardware, operated with push bars on each door, doors to swing into entrance of the escape. A horizontal swing bar shall be placed near the top of the entrance, just outside the doors. Swing bar to be ¾ in. in diameter.

Hospital Type—Same as school type, except change in measurements as specified below.

Diameter of tube to be 36 in. Entrance shall be 40 in. wide, 45 in. high at inside wall line of building and flare to 36 in. diameter at the outer extremity. Elbow shall have a throat radius of 40 in. The easement, or lower end, breaks from 38° angle to horizontal and is about 9 ft. long, rests on a concrete base. The incline of the tube is about 38° to horizontal.

Complete detailed specifications on request.

MEMORANDA

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